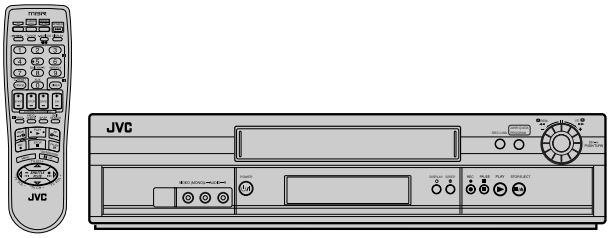
JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

HR-S2901U, HR-S2911U(C), HR-S3901U, HR-S3911U, HR-S3911U(C)



Regarding service information other than these sections, refer to the HR-S5901U service manual (No.82911). Also, be sure to note important safety precautions provided in the service manual.

SPECIFICATIONS *(The specifications shown pertain specifically to the model HR-S3901U.)*

GENERAL

Power requirement	:	AC 120 V~, 60 Hz
Power consumption		
Power on	:	17 W
Power off	:	1.5 W
Temperature		
Operating	:	5°C to 40°C (41°F to 104°F)
Storage	:	–20°C to 60°C (–4°F to140°F)
Operating position	:	Horizontal only
Dimensions (W x H x D)	:	435 mm x 94 mm x 247 mm (17-3/16" x 3-3/4" x 9-3/4")
Weight	:	2.8 kg (6.2 lbs)
Format	:	S-VHS/VHS NTSC standard
Maximum recording time		
SP	:	210 min. with ST-210 video cassette
EP	:	630 min. with ST-210 video cassette

VIDEO/AUDIO

Signal system	:	NTSC-type color signal and EIA monochrome signal, 525 lines/ 60 fields
Recording/Playback system	:	DA-4 (Double Azimuth) head helical scan system
Signal-to-noise ratio	:	45 dB
Horizontal resolution		
VHS	:	230 lines
S-VHS	:	400 lines
Frequency range		
Normal audio	:	70 Hz to 10,000 Hz
Hi-Fi audio	:	20 Hz to 20,000 Hz
Input/Output	:	RCA connectors (IN x 2, OUT x 1) S-video connectors (IN x 1, OUT x 1)

TUNER

Tuning system	:	Frequency-synthesized tuner
Channel coverage		
VHF	:	Channels 2–13
UHF	:	Channels 14–69
CATV	:	113 Channels
RF output	:	Channel 3 or 4 (switchable; preset to Channel 3 when shipped) 75 ohms, unbalanced

TIMER

Clock reference	:	Quartz
Program capacity	:	1-year programable timer/8 programs

Memory backup for timer is not supported.

ACCESSORIES

Provided accessories	:	Infrared remote control unit, "AA" battery x 2, S-video cable (4-pin), RF cable (F-type)

Specifications shown are for SP mode unless specified otherwise.
E. & O.E. Design and specifications subject to change without notice.

V15S0/S1

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No.82912
March 2002

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The following table indicate main different points between models HR-S5901U, HR-S2901U, HR-S2911U(C), HR-S3901U, HR-S3911U and HR-S3911U(C).

ITEM \ MODEL	HR-S5901U	HR-S2901U	HR-S2911U(C)	HR-S3901U	HR-S3911U	HR-S3911U(C)
BODY COLOR	BLACK	←	PURE SILVER	BLACK	PURE SILVER	←
ADVANCED JOG	USED	NOT USED	←	USED	←	←
MULTI BRAND REMOCON	USED	NOT USED	←	USED	←	←
ILLUMI FUNCTION	USED	NOT USED	←	←	←	←
FLYING ERASE HEAD	USED	NOT USED	←	←	←	←
INSERT	USED/BUTTON	NOT USED	←	←	←	←
AUDIO DUBBING	USED/BUTTON	NOT USED	←	←	←	←
FRONT S IN	USED	NOT USED	←	←	←	←
REAR S,A/V IN	USED	NOT USED	←	USED	←	←
VCR PLUS+	USED	NOT USED	←	USED	←	←
REC LINK	USED	NOT USED	←	USED	←	←
CABLE BOX /DBS.BOX CONTROL	USED	NOT USED	←	USED	←	←

Note: Mark ← is same as left.

The following tables indicate different parts number between models HR-S5901U, HR-S2901U, HR-S2911U(C), HR-S3901U, HR-S3911U and HR-S3911U(C).

PACKING AND ACCESSORY ASSEMBLY<M1>

PACKING AND ACCESSORY ASSEMBLY<M1> is indicated on the parts list.

FINAL ASSEMBLY<M2>

⚠ REF NO.	MODEL / ITEM	HR-S5901U	HR-S2901U	HR-S2911U(C)	HR-S3901U	HR-S3911U	HR-S3911U(C)
⚠501	FRONT PANEL ASSY	LP10415-007B	LP10415-003B	LP10415-004B	LP10415-005B	LP10415-006B	←
501A	CASSETTE DOOR	LP21080-004A	LP21080-002A	LP21080-003A	LP21080-002A	LP21080-003A	←
501C	DISPLAY WINDOW	LP21081-003A	LP21081-001A	←	LP21081-002A	←	←
501D	COVER(R)	LP31056-006A	LP31056-002A	LP31056-003A	LP31056-004A	LP31056-005A	←
501E	COVER(L)	LP31057-007A	LP31057-003A	LP31057-004A	LP31057-005A	LP31057-006A	←
⚠502	TOP COVER	LP10418-001C	←	LP10418-002C	LP10418-001C	LP10418-002C	←
503	SCREW,X3,TOPCOVER	QYTDSF3010M	←	QYTDSF3010R	QYTDSF3010M	QYTDSF3010R	←
505	DRUM ASSY	PDV2545A	PDV2542A	←	←	←	←
529	KNOB ASSY	LP31095-003A	—	—	LP31095-002A	LP31095-001A	←
530	SCREW,X3,ADV.JOG/SW	QYTDSF2608Z	—	—	QYTDSF2608Z	←	←
531	SCREW,X2,FRONT S JACK	QYTDSF2608Z	—	—	—	—	—

MAIN BOARD ASSEMBLY<03>

⚠ REF NO.	MODEL / ITEM	HR-S5901U	HR-S2901U	HR-S2911U(C)	HR-S3901U	HR-S3911U	HR-S3911U(C)
PW1	MAIN BOARD ASSY	LPA10155-02C1	LPA10155-03B1	←	LPA10155-04B1	←	←

REAR S JACK BOARD ASSEMBLY<29>

⚠ REF NO.	MODEL / ITEM	HR-S5901U	HR-S2901U	HR-S2911U(C)	HR-S3901U	HR-S3911U	HR-S3911U(C)
PW5	REAR S JACK BOARD ASSY	LPA10155-01A5	LPA10155-02A5	←	LPA10155-01A5	←	←
R928	MG RESISTOR	NRSA02J-750X	—	—	NRSA02J-750X	←	←
R929	MG RESISTOR	NRSA02J-750X	—	—	NRSA02J-750X	←	←
C915	MG RESISTOR	NRSA02J-0R0X	—	—	NRSA02J-0R0X	←	←
J4	S JACK	QND0077-001	QND0076-001	←	QND0077-001	←	←

FRONT S JACK BOARD ASSEMBLY<36>

⚠ REF NO.	MODEL / ITEM	HR-S5901U	HR-S2901U	HR-S2911U(C)	HR-S3901U	HR-S3911U	HR-S3911U(C)
PW4	FRONT S JACK BOARD ASSY	LPA10155-01A4	—	—	—	—	—
J7102	S JACK	QND0084-001	—	—	—	—	—
CN7108	FPC CONNECTOR	QGF1209F1-04	—	—	—	—	—

ADV. JOG/SW BOARD ASSEMBLY<38>

⚠ REF NO.	MODEL / ITEM	HR-S5901U	HR-S2901U	HR-S2911U(C)	HR-S3901U	HR-S3911U	HR-S3911U(C)
PW6	ADV. JOG/SW BOARD ASSY	LPA10155-01A6	—	—	LPA10155-01A6	←	←
R7047	MG RESISTOR	NRSA02J-682X	—	—	NRSA02J-682X	←	←
R7048	MG RESISTOR	NRSA02J-472X	—	—	NRSA02J-472X	←	←
S7030	TACT SWITCH	QSW0456-002Z	—	—	QSW0456-002Z	←	←
S7031	TACT SWITCH	QSW0456-002Z	—	—	QSW0456-002Z	←	←
UN7001	ROTARY ENCODER	QSW0905-001	—	—	QSW0905-001	←	←
CN7003	FPC CONNECTOR	QGF1209-F1-04	—	—	QGF1209-F1-04	←	←

R. PAUSE BOARD ASSEMBLY<99>

⚠ REF NO.	MODEL / ITEM	HR-S5901U	HR-S2901U	HR-S2911U(C)	HR-S3901U	HR-S3911U	HR-S3911U(C)
PW2	R. PAUSE BOARD ASSY	LPA10155-02A2	—	—	LPA10155-02A2	←	←
R7155	MG RESISTOR	NRSA02J-101X	—	—	NRSA02J-101X	←	←
R7156	MG RESISTOR	NRSA02J-101X	—	—	NRSA02J-101X	←	←
J7104	MINI JACK	PU60612	—	—	PU60612	←	←
J7105	MINIJACK	PU60612	—	—	PU60612	←	←

Note: Mark ← is same as left.
Mark — is not used.

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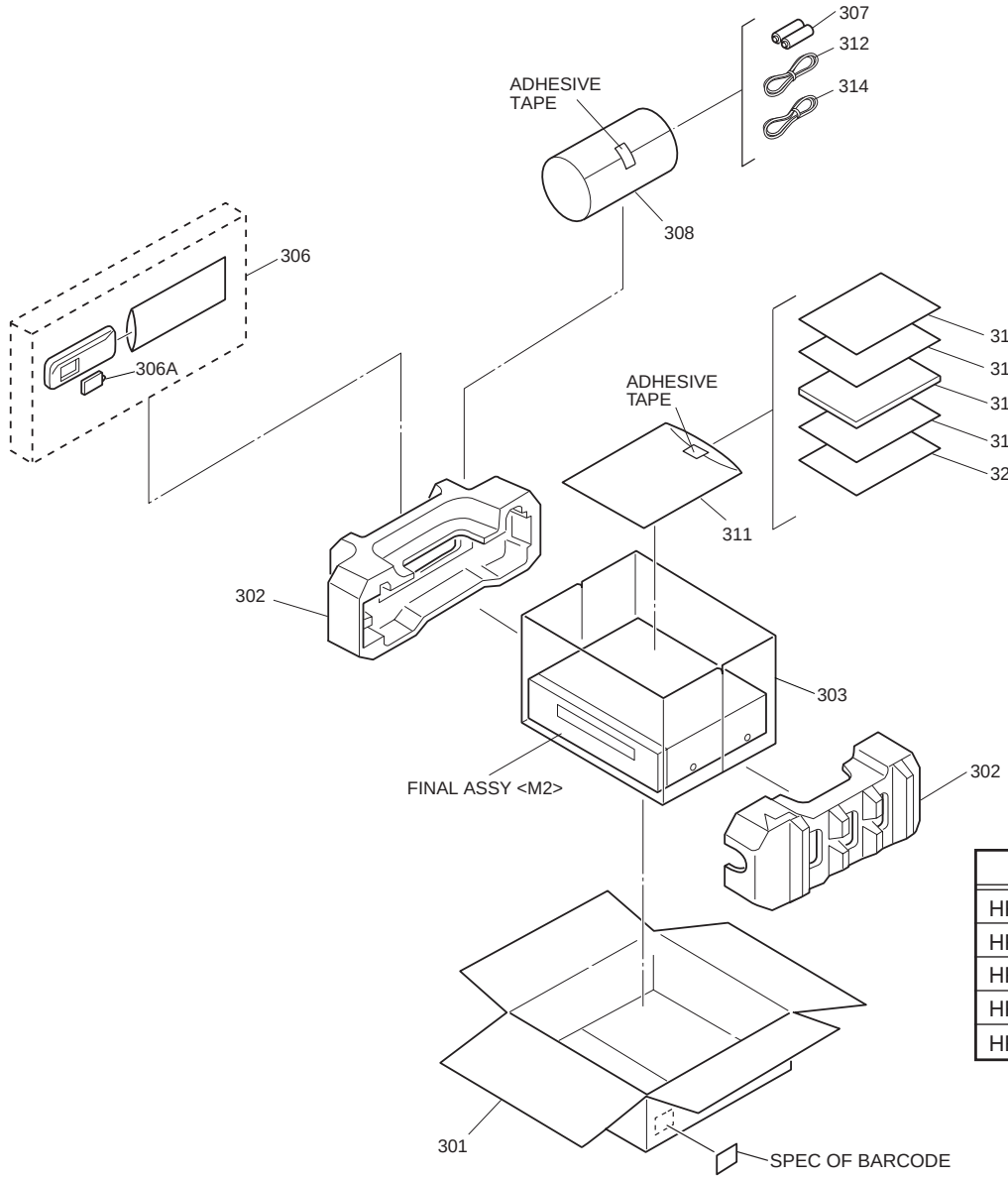
SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING AND ACCESSORY ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



MODEL	MARK
HR-S2901U	A
HR-S2911U(C)	B
HR-S3901U	C
HR-S3911U	D
HR-S3911U(C)	E

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

****

PACKING AND ACCESSORY ASSEMBLY <M1>

		REF No.	PART No.	PART NAME, DESCRIPTION
		301	LP31089-013A	PACKING CASE,A
			LP31089-016A	PACKING CASE,B
			LP31089-019A	PACKING CASE,C
			LP31089-022A	PACKING CASE,D,E
		302	LP31091-001B	CUSHION ASSY
		303	PQM30021-95	POLY BAG
		306	LP20878-001A	REMOTE CONTROLLER,A,B
			LP20878-009A	REMOTE CONTROLLER,C,D,E
		306A	LP40610-001A	COVER(BATTERY)
		307	–	BATTERY,X2("AA"TYPE)
		308	QPC02202230P	POLY BAG
	⚠	310	LPT0636-001A	INST.BOOK(EN),A,B
	⚠		LPT0636-002A	INST.BOOK(FR),B
	⚠		LPT0637-001A	INST.BOOK(EN),C,D,E
	⚠		LPT0637-002A	INST.BOOK(FR),E
		311	QPC02503530P	POLY BAG
		312	PEAC0294-04	RF CABLE
		314	QAM0004-002	S CABLE,C,D,E
		316	BT-52004-2	WARRANTY CARD,B,E
		317	BT-51028-1	REGIST.CARD,A,C,D
		319	BT-20071B	SER.NET CARD,B,E
		320	LP30666-004A	SHEET(COUPON),C,D,E

5.2 ELECTRICAL PARTS LIST

MODEL	MARK	MODEL	MARK
HR-S2901U	A	HR-S3911U	D
HR-S2911U(C)	B	HR-S3911U(C)	E
HR-S3901U	C		

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

****

MAIN BOARD ASSEMBLY <03>

PW1 MAIN BOARD ASS'Y<03> includes the parts shown in the following.

PW1 2D DIGITAL BOARD ASS'Y<05>

		PW1	LPA10155-03B1 MAIN BOARD ASSY,A,B
			LPA10155-04B1 MAIN BOARD ASSY,C,D,E
		IC1	JCP8051-NSA IC
			or JCP8051-MSA IC
		IC501	JCP8038 IC
		IC502	VC2076DP IC
	⚠	IC2201	AN3663FBP IC
		IC3001	MN101D06HJE IC,C,D,E
			MN101D06GJG IC,A,B
			or MN101DF06KAFJE IC,C,D,E
			or MN101DF06KAFJG IC,A,B
		IC3004	LPN0734-003A-03 IC(EEPROM),A,B
			LPN0735-003A-01 IC(EEPROM),C,D,E
		IC7002	GP1U291Q IR DETECT UNIT
			or PIC-37143LJ IR DETECT UNIT
			or PNA4652M00YC IR DETECT UNIT
		Q7	2SC4081/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
		Q8	2SC4081/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
		Q9	2SA1576A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
		Q12	2SA1576A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
		Q17	DTC144WU DIGI TRANSISTOR
			or PDTC144WU DIGI TRANSISTOR
			or RN1309 DIGI TRANSISTOR
			or UN521E DIGI TRANSISTOR
		Q21	2SA1576A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
		Q33	DTC144WU DIGI TRANSISTOR
			or PDTC144WU DIGI TRANSISTOR
			or UN521E DIGI TRANSISTOR
			or RN1309 DIGI TRANSISTOR
		Q38	2SC4081/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
		Q901	2SA1576A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
		Q903	2SA1576A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
		Q904	2SA1576A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
		Q2001	2SC4081/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SD1819A/QRS/-X TRANSISTOR
		Q2002	2SC4081/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SD1819A/QRS/-X TRANSISTOR
		Q2003	DTA144WU DIGI TRANSISTOR
			or PDTA144WU DIGI TRANSISTOR
			or RN2309 TRANSISTOR
			or UN511E DIGI TRANSISTOR
		Q2051	2SC4081/QRS/-X TRANSISTOR
			or 2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
		Q2052	2SA1576A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
			or 2SB1218A/QR/-X TRANSISTOR
		Q2053	DTC144WU DIGI TRANSISTOR
			or PDTC144WU DIGI TRANSISTOR
			or RN1309 DIGI TRANSISTOR
			or UN521E DIGI TRANSISTOR
		Q2054	2SA1576A/QR/-X TRANSISTOR
			or 2SB1218A/QR/-X TRANSISTOR
			or 2PA1576/R/-X TRANSISTOR
		Q2055	DTC144WU DIGI TRANSISTOR
			or PDTC144WU DIGI TRANSISTOR
			or RN1309 DIGI TRANSISTOR
			or UN521E DIGI TRANSISTOR
		Q2201	DTA144WU DIGI TRANSISTOR
			or PDTA144WU DIGI TRANSISTOR
			or RN2309 TRANSISTOR
			or UN511E DIGI TRANSISTOR
		Q2202	DTC144WU DIGI TRANSISTOR
			or PDTC144WU DIGI TRANSISTOR
			or RN1309 DIGI TRANSISTOR
			or UN521E DIGI TRANSISTOR
		Q2203	2SC4081/QRS/-X TRANSISTOR
			or 2SD1819A/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
		Q2204	2SC4081/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
			or 2SD1819A/QRS/-X TRANSISTOR
		Q2251	DTC144WU DIGI TRANSISTOR
			or PDTC144WU DIGI TRANSISTOR
			or RN1309 DIGI TRANSISTOR
			or UN521E DIGI TRANSISTOR
		Q2252	DTC144WU DIGI TRANSISTOR
			or PDTC144WU DIGI TRANSISTOR
			or RN1309 DIGI TRANSISTOR
			or UN521E DIGI TRANSISTOR
		Q2253	DTC144WU DIGI TRANSISTOR
			or PDTC144WU DIGI TRANSISTOR
			or RN1309 DIGI TRANSISTOR
			or UN521E DIGI TRANSISTOR
		Q2254	DTC114EU DIGI TRANSISTOR
			or PDTC114EU DIGI TRANSISTOR
			or RN1302 DIGI TRANSISTOR
			or UN5211 DIGI TRANSISTOR
		Q3002	PTZ-NV16A PHOTO TRANSISTOR
		Q3005	UN521K TRANSISTOR,C,D,E
			or DTC114WU DIGI TRANSISTOR,C,D,E
		Q3006	2SC4081/QRS/-X TRANSISTOR
		Q3007	2SC4081/QRS/-X TRANSISTOR
		Q4001	UN5211 DIGI TRANSISTOR
			or PDTC114EU DIGI TRANSISTOR
			or DTC114EU DIGI TRANSISTOR
			or RN1302 DIGI TRANSISTOR
		Q4002	2SD1819A/QRS/-X TRANSISTOR
			or 2SC4081/QRS/-X TRANSISTOR
			or 2PC4081/R/-X TRANSISTOR
		Q5101	2SK2043-CB14 FE TRANSISTOR
			or 2SK2043 FE TRANSISTOR
		Q5102	2SD2144S/UV/-T TRANSISTOR
		Q5301	2SC1740S/RS/-T TRANSISTOR
			or 2SC3199/YG/-T TRANSISTOR
		Q5303	2SC5739/QP/ TRANSISTOR

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		Q5304	2SD2144S/UV/-T	TRANSISTOR
		Q5305	DTA114EU	DIGI TRANSISTOR
			or PDTA114EU	DIGI TRANSISTOR
			or RN2302	TRANSISTOR
			or UN5111	DIGI TRANSISTOR
		Q5306	DTC114EU	DIGI TRANSISTOR
			or PDTC114EU	DIGI TRANSISTOR
			or UN5211	DIGI TRANSISTOR
			or RN1302	DIGI TRANSISTOR
		Q6030	2SB1218A/QR/-X	TRANSISTOR
			or 2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q7001	DTA143TU	DIGI TRANSISTOR
		Q7002	DTA143TU	DIGI TRANSISTOR
		Q7003	DTA143TU	DIGI TRANSISTOR
		Q7004	DTA143TU	DIGI TRANSISTOR
		Q7005	DTA143TU	DIGI TRANSISTOR
		Q7008	DTC143TU	DIGI TRANSISTOR
		Q7009	DTC143TU	DIGI TRANSISTOR
		Q7010	DTC143TU	DIGI TRANSISTOR
		Q7011	DTC143TU	DIGI TRANSISTOR
		Q7012	DTC143TU	DIGI TRANSISTOR
		Q7013	DTC143TU	DIGI TRANSISTOR
		Q7014	DTC143TU	DIGI TRANSISTOR
		Q7201	2SA720/RS/-T	TRANSISTOR,C,D,E
		D1	QUY153-050Y	IM BUS WIRE
		D502	1SS133	DIODE,C,D,E
			or 1SS270A	DIODE,C,D,E
		D503	1SS133	DIODE,C,D,E
			or 1SS270A	DIODE,C,D,E
		D2251	1SS133	DIODE
			or 1SS270A	DIODE
		D3001	LNB2301L01VI	LE DIODE
		D3002	1SS133	DIODE
			or 1SS270A	DIODE
		D3005	11ES2	DIODE
			or 1A3G	DIODE
		D3007	1SS133	DIODE,C,D,E
			or 1SS270A	DIODE,C,D,E
		D3016	MTZJ3.9B	ZENER DIODE
			or RD3.9ES/B2/-T2	ZENER DIODE
		D5001	S1WB/A/60-4102	BRIDGE DIODE
			or S1WB/A/60-X	BRIDGE DIODE
			or S1WB(A)60F4072X	BRIDGE DIODE
		D5101	AU01	DIODE
			or 10ELS4	FR DIODE
		D5102	AU01	DIODE
			or 10ELS4	FR DIODE
		D5103	1SS133	DIODE
			or 1SS270A	DIODE
		D5105	1SS133	DIODE
			or 1SS270A	DIODE
		D5203	AU01Z	FR DIODE
			or 10ELS2	FR DIODE
		D5204	AU01Z	FR DIODE
			or 10ELS2	FR DIODE
		D5206	AW04	SB DIODE
			or SBO40	SB DIODE
			or 1S4	SB DIODE
			or AK04	SB DIODE
			or 11EQS04	SB DIODE

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		D5207	AW04	SB DIODE	
			or SBO40	SB DIODE	
			or AK04	SB DIODE	
			or 1S4	SB DIODE	
			or 11EQS04	SB DIODE	
		D5210	AU01Z	FR DIODE	
			or PG104RS	FR DIODE	
			or 10ELS2	FR DIODE	
			or ERA18-02-T2	FR DIODE	
			or 1SR153-400-T2	FR DIODE	
		D5301	MTZJ15C	ZENER DIODE	
			or RD15ES/B3/-T2	ZENER DIODE	
		D5302	MTZJ12A	ZENER DIODE	
			or RD12ES/B1/-T2	ZENER DIODE	
		D5303	MTZJ5.6A	ZENER DIODE	
			or RD5.6ES/B1/-T2	ZENER DIODE	
		D5304	QUY153-050Y	IM BUS WIRE	
		D5305	MTZJ5.6C	ZENER DIODE	
			or RD5.6ES/B3/-T2	ZENER DIODE	
		D6002	HZ30-2L-T2	ZENER DIODE	
			or HZ30-2LTD	Z DIODE (M)	
		R1	NRSA02J-622X	MG RESISTOR	6.2kΩ,1/10W
		R2	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R3	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R6	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R7	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R8	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R9	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R12	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R25	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R26	NRSA02J-822X	MG RESISTOR	8.2kΩ,1/10W
		R27	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R28	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R29	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R31	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R32	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R34	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R36	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R42	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R44	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R45	NRSA02J-333X	MG RESISTOR	33kΩ,1/10W
		R46	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R48	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R68	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R77	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R90	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R93	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R104	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R118	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R120	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R201	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R202	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R503	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R504	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R505	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
		R506	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
		R507	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R508	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
		R509	NRSA02J-162X	MG RESISTOR	1.6kΩ,1/10W
		R510	NRVA02D-102X	CMF RESISTOR	1kΩ,1/10W
		R511	NRVA02D-471X	CMF RESISTOR	470Ω,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R512	NRVA02D-102X	CMF RESISTOR	1kΩ,1/10W
		R513	NRVA02D-152X	CMF RESISTOR	1.5kΩ,1/10W
		R514	NRVA02D-332X	CMF RESISTOR	3.3kΩ,1/10W
		R515	NRVA02D-332X	CMF RESISTOR	3.3kΩ,1/10W
		R901	NRSA02J-820X	MG RESISTOR	82Ω,1/10W
		R902	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R904	QRE123J-331X	RESISTOR	330Ω,1/2W
		R905	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R911	NRSA02J-750X	MG RESISTOR,C,D,E	75Ω,1/10W
		R912	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R916	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R917	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R919	QRE123J-331X	RESISTOR	330Ω,1/2W
		R920	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R921	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R922	QRE123J-331X	RESISTOR	330Ω,1/2W
		R929	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R2003	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R2007	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2010	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2013	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2014	NRSA02J-224X	MG RESISTOR	220kΩ,1/10W
		R2015	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R2016	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2017	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R2018	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2019	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2053	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R2054	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2055	NRSA02J-3R3X	MG RESISTOR	3.3Ω,1/10W
		R2056	QRE141J-820Y	RESISTOR	82Ω,1/4W
		R2057	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2058	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2059	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2060	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2201	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2202	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2203	NRSA02J-473X	MG RESISTOR,C,D,E	47kΩ,1/10W
		R2204	NRSA02J-682X	MG RESISTOR,C,D,E	6.8kΩ,1/10W
		R2205	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2206	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2207	NRSA02J-473X	MG RESISTOR,C,D,E	47kΩ,1/10W
		R2208	NRSA02J-682X	MG RESISTOR,C,D,E	6.8kΩ,1/10W
		R2209	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R2210	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2211	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R2212	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R2213	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2214	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R2215	QRE141J-221Y	RESISTOR	220Ω,1/4W
		R2216	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2217	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2218	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
		R2219	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2220	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2230	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R2231	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R2251	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2252	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R2253	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R2254	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R2255	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R2256	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R2257	NRSA02J-684X	MG RESISTOR	680kΩ,1/10W
		R2258	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3003	NRSA02J-102X	MG RESISTOR,C,D,E	1kΩ,1/10W
		R3004	QUY160-100Y	IM BUS WIRE	
		R3005	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R3006	QUY160-100Y	IM BUS WIRE	
		R3007	QUY160-100Y	IM BUS WIRE	
		R3008	QUY160-100Y	IM BUS WIRE	
		R3009	QUY160-100Y	IM BUS WIRE	
		R3010	QUY160-100Y	IM BUS WIRE	
		R3011	QUY160-100Y	IM BUS WIRE	
		R3012	QUY160-100Y	IM BUS WIRE	
		R3016	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3017	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3018	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3021	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3022	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3031	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3032	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3035	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3055	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3058	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3060	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3064	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3066	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3084	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3086	NRSA02J-102X	MG RESISTOR,C,D,E	1kΩ,1/10W
		R3087	NRSA02J-102X	MG RESISTOR,C,D,E	1kΩ,1/10W
		R3090	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3091	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3092	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3093	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3094	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3095	QUY160-100Y	IM BUS WIRE	
		R3096	QUY160-100Y	IM BUS WIRE	
		R3097	QUY160-100Y	IM BUS WIRE	
		R3098	QUY160-100Y	IM BUS WIRE	
		R3099	QUY160-100Y	IM BUS WIRE	
		R3100	QUY160-100Y	IM BUS WIRE	
		R3205	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3206	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3207	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3208	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3209	QRE141J-181Y	RESISTOR	180Ω,1/4W
		R3211	QRE141J-183Y	RESISTOR	18kΩ,1/4W
		R3212	NRSA02J-121X	MG RESISTOR	120Ω,1/10W
		R3213	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R3214	NRSA02J-121X	MG RESISTOR	120Ω,1/10W
		R3215	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R3216	NRSA02J-474X	MG RESISTOR	470kΩ,1/10W
		R3217	NRSA02J-334X	MG RESISTOR	330kΩ,1/10W
		R3218	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3219	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3220	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R3222	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3223	NRSA02J-105X	MG RESISTOR	1MΩ,1/10W
		R3224	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R3226	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3227	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R3236	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3237	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3238	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3240	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3241	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3242	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3243	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R3244	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R3245	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R3252	QRE141J-153Y	RESISTOR	15kΩ,1/4W
		R3253	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4001	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R4002	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R4003	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R4006	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R4010	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R4011	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R4012	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R4018	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4019	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	⚠	R5001	QRZ9046-475Z	RESISTOR	4.7MΩ,1/2W
		R5101	QRE141J-334Y	RESISTOR	330kΩ,1/4W
		R5102	QRE141J-334Y	RESISTOR	330kΩ,1/4W
		R5103	QRE141J-683Y	RESISTOR	68kΩ,1/4W
		R5104	QRG029J-154G	OMF RESISTOR	150kΩ,2W
		R5106	QRT01DJ-R39X	MF RESISTOR	0.39Ω,1W
		R5107	QRE121J-331Y	RESISTOR	330Ω,1/2W
		R5108	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R5109	QRE141J-681Y	RESISTOR	680Ω,1/4W
		R5110	NRSA02J-224X	MG RESISTOR	220kΩ,1/10W
		R5112	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R5302	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5303	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R5304	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R5306	QRE141J-181Y	RESISTOR	180Ω,1/4W
		R5310	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R5312	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5313	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6020	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6021	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6030	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R6031	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R6050	QRE141J-330Y	RESISTOR	33Ω,1/4W
		R6051	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6502	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R6503	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R6504	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R7002	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7003	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7004	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7005	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7006	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7007	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7008	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7015	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R7020	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R7021	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R7022	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R7023	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R7024	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R7030	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R7031	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R7032	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R7033	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R7034	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R7047	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R7202	NRSA02J-471X	MG RESISTOR,C,D,E	470Ω,1/10W
		R7203	NRSA02J-222X	MG RESISTOR,C,D,E	2.2kΩ,1/10W
		R7204	QRE123J-100X	RESISTOR,C,D,E	10Ω,1/2W
		VR2251	QVP0039-103Z	TRIM RESISTOR	
		B11	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B502	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B2051	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B3001	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B5301	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B5302	QUY153-050Y	IM BUS WIRE	
		B6020	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B7001	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		C1	NCF21CZ-105X	CAPACITOR,C,D,E	1μF,16V
			NCF21EZ-104X	CAPACITOR,A,B	0.1μF,25V
		C2	NCF21CZ-105X	CAPACITOR,C,D,E	1μF,16V
			NCF21EZ-104X	CAPACITOR,A,B	0.1μF,25V
		C3	NCF21CZ-105X	CAPACITOR,C,D,E	1μF,16V
			NCF21EZ-104X	CAPACITOR,A,B	0.1μF,25V
		C4	NCF21CZ-105X	CAPACITOR,C,D,E	1μF,16V
			NCF21EZ-104X	CAPACITOR,A,B	0.1μF,25V
		C5	QEKC0JM-476	E CAPACITOR	47μF,6.3V
		C6	QCBB1HK-103	CAPACITOR	0.01μF,50V
		C7	NDC21HJ-151X	CAPACITOR	150pF,50V
		C8	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C9	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C10	NDC21HJ-151X	CAPACITOR	150pF,50V
		C11	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C12	NDC21HJ-7R0X	CAPACITOR	7pF,50V
		C14	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C15	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C16	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C17	QEKJ1HM-335	E CAPACITOR	3.3μF,50V
		C19	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C20	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C21	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C22	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
		C23	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C24	QCBB1HK-104	CAPACITOR	0.1μF,50V
		C25	NDC21HJ-4R0X	CAPACITOR	4pF,50V
		C26	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C27	NCB21EK-223X	CAPACITOR	0.022μF,25V
		C28	QEKJ1HM-335	E CAPACITOR	3.3μF,50V
		C29	NCB21HK-472X	CAPACITOR	0.0047μF,50V
		C30	QEKJ1HM-474	E CAPACITOR	0.47μF,50V
		C31	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
		C32	QCBB1HK-103	CAPACITOR	0.01μF,50V
		C33	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C34	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C35	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C36	QEKJ1HM-475	E CAPACITOR	4.7μF,50V
		C37	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C38	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
		C39	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C40	QEKJ1EM-106	E CAPACITOR	10μF,25V
		C54	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C59	NCB21HK-103X	CAPACITOR	0.01μF,50V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C60	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C61	NCB21HK-103X	CAPACITOR	0.01µF,50V
C63	NCB21EK-104X	CAPACITOR	0.1µF,25V
C64	NDC21HJ-220X	CAPACITOR	22pF,50V
C71	NCB21HK-103X	CAPACITOR	0.01µF,50V
C72	NDC21HJ-470X	CAPACITOR	47pF,50V
C73	NDC21HJ-120X	CAPACITOR	12pF,50V
C74	NDC21HJ-120X	CAPACITOR	12pF,50V
C80	NCB21HK-103X	CAPACITOR	0.01µF,50V
C84	NDC21HJ-220X	CAPACITOR	22pF,50V
C110	NCB21HK-331X	CAPACITOR	330pF,50V
C201	QERF0JM-476	E CAPACITOR	47µF,6.3V
C202	NCB21EK-104X	CAPACITOR	0.1µF,25V
C203	NCF21CZ-105X	CAPACITOR	1µF,16V
C205	NDC21HJ-101X	CAPACITOR	100pF,50V
C207	NCF21CZ-105X	CAPACITOR	1µF,16V
C501	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C502	QEKJ1HM-104	E CAPACITOR	0.1µF,50V
C503	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C504	NCB21EK-104X	CAPACITOR	0.1µF,25V
C505	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C506	NCB21HK-103X	CAPACITOR	0.01µF,50V
C507	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C508	QEKJ1HM-474	E CAPACITOR	0.47µF,50V
C509	QEKJ1EM-106	E CAPACITOR	10µF,25V
C510	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C511	NCB21HK-103X	CAPACITOR	0.01µF,50V
C512	NCB21HK-103X	CAPACITOR	0.01µF,50V
C513	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C514	NCB21HK-103X	CAPACITOR	0.01µF,50V
C515	NCB21HK-103X	CAPACITOR	0.01µF,50V
C518	NCB21EK-104X	CAPACITOR	0.1µF,25V
C519	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C520	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C521	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C522	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C523	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C524	NDC21HG-301X	CAPACITOR	300pF,50V
C525	NDC21HG-301X	CAPACITOR	300pF,50V
C526	NDC21HJ-101X	CAPACITOR	100pF,50V
C527	NDC21HJ-181X	CAPACITOR	180pF,50V
C528	NDC21HG-271X	CAPACITOR	270pF,50V
C529	NDC21HG-820X	CAPACITOR	82pF,50V
C530	NDC21HG-221X	CAPACITOR	220pF,50V
C531	NDC21HG-301X	CAPACITOR	300pF,50V
C532	NDC21HG-301X	CAPACITOR	300pF,50V
C533	NCB21HK-103X	CAPACITOR	0.01µF,50V
C534	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C535	NCB21HK-103X	CAPACITOR	0.01µF,50V
C551	QEKJ1HM-105	E CAPACITOR,C,D,E	1µF,50V
C552	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
C553	NCB21HK-103X	CAPACITOR,C,D,E	0.01µF,50V
C558	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
C560	QEKJ1HM-105	E CAPACITOR	1µF,50V
C561	QEKJ1HM-105	E CAPACITOR,C,D,E	1µF,50V
C901	QETN0JM-477	E CAPACITOR	470µF,6.3V
C904	NCB21HK-103X	CAPACITOR	0.01µF,50V
C912	NCB21HK-103X	CAPACITOR	0.01µF,50V
C913	QETN0JM-477	E CAPACITOR	470µF,6.3V
C915	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
C2001	QEKJ1HM-475	E CAPACITOR	4.7µF,50V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C2002	QEKJ1HM-105	E CAPACITOR	1µF,50V
C2003	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C2005	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C2006	NCB21HK-123X	CAPACITOR	0.012µF,50V
C2007	QEKJ1CM-226	E CAPACITOR	22µF,16V
C2008	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C2009	NCB21HK-102X	CAPACITOR	0.001µF,50V
C2010	NCB21HK-152X	CAPACITOR	0.0015µF,50V
C2011	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C2012	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C2051	NCB21HK-331X	CAPACITOR	330pF,50V
C2053	NCB21HK-472X	CAPACITOR	0.0047µF,50V
C2054	NCB21HK-223X	CAPACITOR	0.022µF,50V
C2055	QEKJ1EM-106	E CAPACITOR	10µF,25V
C2061	QFN31HJ-823	F CAPACITOR	0.082µF,50V
C2201	QEKJ1EM-106	E CAPACITOR	10µF,25V
C2202	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C2203	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C2204	QEKJ0JM-336	E CAPACITOR	33µF,6.3V
C2205	QEKJ1EM-106	E CAPACITOR	10µF,25V
C2206	QEKJ1EM-106	E CAPACITOR	10µF,25V
C2207	NCB21HK-153X	CAPACITOR	0.015µF,50V
C2208	NCB21HK-153X	CAPACITOR	0.015µF,50V
C2209	QEKJ1EM-106	E CAPACITOR	10µF,25V
C2210	QEKJ1EM-106	E CAPACITOR	10µF,25V
C2211	QEKJ0JM-336	E CAPACITOR	33µF,6.3V
C2212	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C2214	QEKJ1EM-106	E CAPACITOR	10µF,25V
C2215	QEKC1EM-106	E CAPACITOR	10µF,25V
C2216	QEKJ1CM-476	E CAPACITOR	47µF,16V
C2218	QEKJ1EM-106	E CAPACITOR	10µF,25V
C2219	QEKC1CM-226	E CAPACITOR	22µF,16V
C2220	QEKJ1EM-106	E CAPACITOR	10µF,25V
C2221	NCB21EK-223X	CAPACITOR	0.022µF,25V
C2222	NCB21HK-103X	CAPACITOR	0.01µF,50V
C2230	NDC21HJ-101X	CAPACITOR	100pF,50V
C2231	NDC21HJ-101X	CAPACITOR	100pF,50V
C2251	NCB21HK-103X	CAPACITOR	0.01µF,50V
C2252	NCB21HK-103X	CAPACITOR	0.01µF,50V
C2253	NCB21HK-103X	CAPACITOR	0.01µF,50V
C2254	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C2255	NCB21HK-103X	CAPACITOR	0.01µF,50V
C2256	NCB21HK-103X	CAPACITOR	0.01µF,50V
C2257	NCB21HK-103X	CAPACITOR	0.01µF,50V
C2259	QEKJ1HM-334	E CAPACITOR	0.33µF,50V
C3008	NCB21HK-103X	CAPACITOR	0.01µF,50V
C3011	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C3016	NDC21HJ-150X	CAPACITOR	15pF,50V
C3017	NDC21HJ-270X	CAPACITOR	27pF,50V
C3019	NDC21HJ-150X	CAPACITOR	15pF,50V
C3020	NDC21HJ-180X	CAPACITOR	18pF,50V
C3023	NCF21CZ-105X	CAPACITOR	1µF,16V
C3027	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C3035	NCF21EZ-105X	CAPACITOR	1µF,25V
C3036	QERF0JM-107	E CAPACITOR	100µF,6.3V
C3051	NCF21EZ-104X	CAPACITOR	0.1µF,25V
C3053	QETJ0JM-337	E CAPACITOR	330µF,6.3V
C3071	QETJ1HM-336	E CAPACITOR	33µF,50V
C4001	NCB21EK-104X	CAPACITOR	0.1µF,25V
C4002	QERF1HM-105	E CAPACITOR	1µF,50V
C4004	QERF1AM-336	E CAPACITOR	33µF,10V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C4006	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		C4007	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C4009	NCB21HK-102X	CAPACITOR	0.001μF,50V
		C4010	QERF0JM-476	E CAPACITOR	47μF,6.3V
		C4011	NCB21CK-224X	CAPACITOR	0.22μF,16V
		C4014	NDC21HJ-101X	CAPACITOR	100pF,50V
		C4019	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C4031	QEKJ1CM-336	E CAPACITOR	33μF,16V
	⚠	C5001	QFZ9072-473	F CAPACITOR	0.047μF,250V
	⚠	C5004	QCZ9094-472	CAPACITOR	0.0047μF,125V
		C5006	QETM2DM-826	E CAPACITOR	82μF,200V
		C5101	QCZ0212-472	CAPACITOR	0.0047μF,1kV
		C5102	QCZ0339-101Z	CAPACITOR	100pF,1kV
		C5104	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C5105	QFN31HJ-183	F CAPACITOR	0.018μF,50V
		C5107	QFVF1HJ-104Z	F CAPACITOR	0.1μF,50V
		C5202	QETN1CM-108	E CAPACITOR	1000μF,16V
		C5203	QEMT1AM-128	E CAPACITOR	1200μF,10V
		C5204	QETJ2AM-475	E CAPACITOR	4.7μF,100V
		C5206	QEKJ1CM-476	E CAPACITOR	47μF,16V
		C5207	QEKJ1CM-107	E CAPACITOR	100μF,16V
		C5301	QEKJ1CM-107	E CAPACITOR	100μF,16V
		C5302	QETN1HM-225	E CAPACITOR	2.2μF,50V
		C5303	QEKJ1CM-107	E CAPACITOR	100μF,16V
		C5305	QFVF1HJ-104Z	F CAPACITOR	0.1μF,50V
		C6501	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C6502	QEKC1EM-106	E CAPACITOR	10μF,25V
		C6503	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C6504	QCFB1HZ-104	CAPACITOR	0.1μF,50V
		C6506	QEKJ1HM-105	E CAPACITOR	1μF,50V
		C6508	NCB21EK-223X	CAPACITOR	0.022μF,25V
		C6509	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C6512	NCB21EK-223X	CAPACITOR	0.022μF,25V
		C6513	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
		C6514	NCB21EK-223X	CAPACITOR	0.022μF,25V
		C6515	QEKC1HM-335	E CAPACITOR	3.3μF,50V
		C6516	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
		C6517	NCB21CK-224X	CAPACITOR	0.22μF,16V
		C7011	QEKJ0JM-227	E CAPACITOR	220μF,6.3V
		C7206	QEKJ0JM-227	E CAPACITOR,C,D,E	220μF,6.3V
		L1	QQL29BJ-100Z	COIL	10μH
		L2	QQL29BJ-101Z	COIL	100μH
		L3	QQL29BJ-100Z	COIL	10μH
		L4	QQL29BJ-100Z	COIL	10μH
		L5	QQL29BJ-100Z	COIL	10μH
		L11	QQL01BJ-120Z	COIL	12μH
		L13	QQL231J-470Y	COIL	47μH
		L15	QQL29BJ-100Z	COIL	10μH
		L19	QQL29BJ-100Z	COIL	10μH
		L20	QUY153-050Y	IM BUS WIRE	
		L28	QQL231J-150Y	COIL	15μH
		L201	QUY153-050Y	IM BUS WIRE	
		L203	QQL231J-1R0Y	COIL	1.0μH
		L501	QQL29BJ-100Z	COIL	10μH
		L503	QQL29BJ-100Z	COIL	10μH
		L504	QQL29BJ-100Z	COIL	10μH
		L505	QUY153-050Y	IM BUS WIRE	
		L901	QQL29BJ-101Z	COIL	100μH
		L2001	QUY153-050Y	IM BUS WIRE	
		L2201	QUY153-050Y	IM BUS WIRE	
		L2251	QQL29BJ-100Z	COIL	10μH

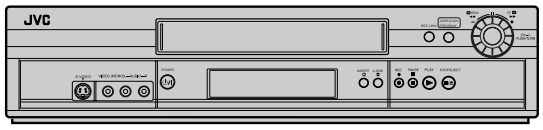
#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		L4001	QUY153-050Y	IM BUS WIRE	
		L5201	PELN1184	COIL	33μH
		L5202	PELN1184	COIL	33μH
		L5301	QUY153-050Y	IM BUS WIRE	
		L6001	QUY153-050Y	IM BUS WIRE	
		L6003	QUY153-050Y	IM BUS WIRE	
		L6004	QUY153-050Y	IM BUS WIRE	
		L6032	QUY153-050Y	IM BUS WIRE	
		L6050	QUY153-050Y	IM BUS WIRE	
		L6501	QUY153-050Y	IM BUS WIRE	
		L7201	QQL29BJ-101Z	COIL,C,D,E	100μH
		X2	QAX0575-001	CRYSTAL RESONATOR	
		X3001	QAX0526-001	CRYSTAL RESONATOR	
		S3001	QSW0602-004	PUSH SWITCH,REC SAFETY	
		S3002	QSW0602-004	PUSH SWITCH,S CASS.	
		S7002	QSW0456-002Z	TACT SWITCH,POWER	
		S7004	QSW0456-002Z	TACT SWITCH,DISPLAY	
		S7006	QSW0456-002Z	TACT SWITCH,SP/EP	
		S7008	QSW0456-002Z	TACT SWITCH,REC	
		S7010	QSW0456-002Z	TACT SWITCH,PLAY	
		S7011	QSW0456-002Z	TACT SWITCH,PLAY	
		S7013	QSW0456-002Z	TACT SWITCH,STOP/EJECT	
		K5101	QQR0678-001Z	FERRATE BEADS	
		K5102	QUY153-050Y	IM BUS WIRE	
		PC3001	RPI-304J	IC(PHOTO SENSOR)	
		PC3002	RPI-304J	IC(PHOTO SENSOR)	
	⚠	PC5101	PS2501-1	PH COUPLER	
		T2051	PELN0832	OSC TRANSFORMER	
	⚠	T5001	QQS0083-001	SW TRANSF	
	⚠	TB1	LP20978-001E	TERMINAL BOARD,A,B	
	⚠		LP20978-003E	TERMINAL BOARD,C,D,E	
		TB2	LP21083-001B	TERMINAL BOARD,A,B	
			LP21083-002B	TERMINAL BOARD,C,D,E	
		TU6001	QAU0256-001	TUNER	
		SD1	LP21099-001B	SHIELD CASE(PRE)	
		DI7001	LTG-Y2K12M-01J	LE DIODE	
	⚠	CD1	QMPD340-165-K	POWER CORD	
		OT1	LP30002-0A7A	SPACER	
		OT2	QYTDSF3010M	SCREW,A,B	
		J1	QNN0380-002	PIN JACK,REAR1 IN,C,D,E	
		J2	QNN0286-002	PIN JACK,REAR OUT	
		J7101	QNN0381-001	PIN JACK,FRONT IN	
		FC5001	QNG0006-001Z	FUSE CLIP,F5001	
		FC5002	QNG0006-001Z	FUSE CLIP,F5001	
		FW3001	QUM023-18A4A4	P.R.WIRE,(1-3)FW7104,C,D,E	
		FW7101	QUM023-26A4A4	P.R.WIRE,(1-3)FW7102,A,B	
			QUM025-26A4A4	P.R.WIRE,(1-5)FW7102,C,D,E	
		WR6	QUB220-17A4A4	SIN TWIST WIRE	
	⚠	LF5002	QQR0532-001	LINE FILTER	
	⚠	VA5001	QAF0023-431Z	VARISTOR	
		CN1	QGF1201C2-09	FPC CONNECTOR,(1-9)DRUM	
		CN2001	QGF1207C1-06	FPC CONNECTOR,(1-6)AC/HEAD	
		CN2002	QGB2532J1-02	CONNECTOR,(1-2)FE HEAD	
		CN3001	QGB2032M4-12	CONNECTOR,(1-12)CAPSTAN MOTOR	
		CN7001	QGF1207C1-04	FPC CONNECTOR,(1-4)ADV.JOG,C,D,E	
		JS3001	QSW0954-002	ROTARY ENCODER	
		CP3001	QUY153-050Y	IM BUS WIRE	
		CP4001	QUY153-050Y	IM BUS WIRE	
	⚠	F5001	QMF51N2-1R25J1	FUSE	T1.25A,250V

JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

HR-S5901U, HR-S5911U, HR-S5911U(C)



S-VHS Hi-Fi VCR Plus+ G3 CABLE BOX CONTROL

SPECIFICATIONS

GENERAL

Power requirement	:	AC 120 V~, 60 Hz
Power consumption		
Power on	:	17 W
Power off	:	1.5 W
Temperature		
Operating	:	5°C to 40°C (41°F to 104°F)
Storage	:	–20°C to 60°C (–4°F to140°F)
Operating position	:	Horizontal only
Dimensions (W x H x D)	:	435 mm x 94 mm x 247 mm (17-3/16" x 3-3/4" x 9-3/4")
Weight	:	2.8 kg (6.2 lbs)
Format	:	S-VHS/VHS NTSC standard
Maximum recording time		
SP	:	210 min. with ST-210 video cassette
EP	:	630 min. with ST-210 video cassette

VIDEO/AUDIO

Signal system	:	NTSC-type color signal and EIA monochrome signal, 525 lines/ 60 fields
Recording/Playback system	:	DA-4 (Double Azimuth) head helical scan system
Signal-to-noise ratio	:	45 dB
Horizontal resolution		
VHS	:	230 lines
S-VHS	:	400 lines
Frequency range		
Normal audio	:	70 Hz to 10,000 Hz
Hi-Fi audio	:	20 Hz to 20,000 Hz
Input/Output	:	RCA connectors (IN x 2, OUT x 1) S-video connectors (IN x 2, OUT x 1)

TUNER

Tuning system	:	Frequency-synthesized tuner
Channel coverage		
VHF	:	Channels 2–13
UHF	:	Channels 14–69
CATV	:	113 Channels
RF output	:	Channel 3 or 4 (switchable; preset to Channel 3 when shipped) 75 ohms, unbalanced

TIMER

Clock reference	:	Quartz
Program capacity	:	1-year programmable timer/ 8 programs

Memory backup for timer is not supported.

ACCESSORIES

Provided accessories	:	Infrared remote control unit, "AA" battery x 2, S-video cable (4-pin), RF cable (F-type)

Specifications shown are for SP mode unless specified otherwise.
E. & O.E. Design and specifications subject to change without notice.

V15S15

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The following table lists the differing point(s) between models HR-S5901U, HR-S5911U, and HR-S5911U(C).

ITEM \ MODEL	HR-S5901U	HR-S5911U	HR-S5911U(C)
BODY COLOR	BLACK	PURE-SILVER	←

Note(s): Mark ← is same as left.

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

●Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded ( ) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape 3) Spacers 5) Barrier
   2) PVC tubing 4) Insulation sheets for transistors

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

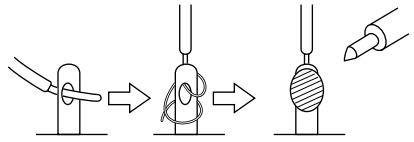


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

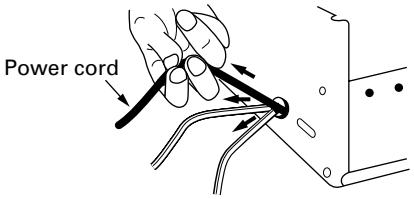


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number :** E03830-001
    2) **Required tool :** Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

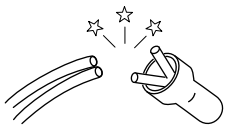


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

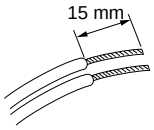


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

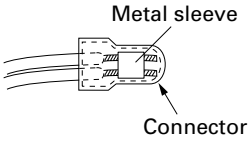


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

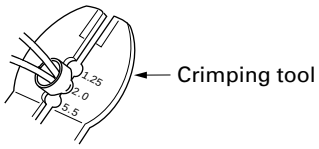


Fig.6

(5) Check the four points noted in Fig.7.

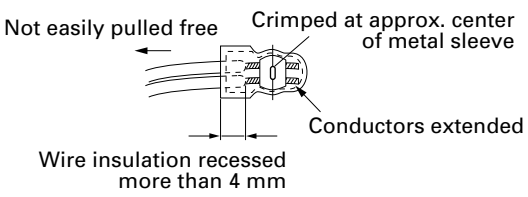

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

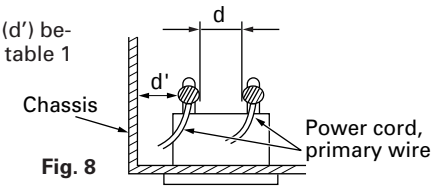


Fig. 8

4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method : (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

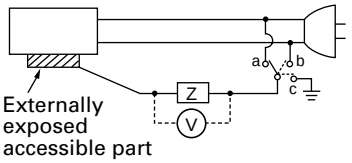


Fig. 9

5. Grounding (Class Ⅰ model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

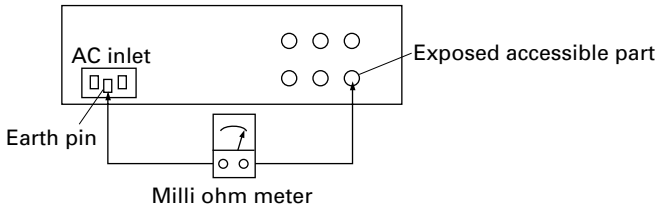


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 miute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	1 MΩ ≦ R ≦ 12 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class Ⅱ) AC 1.5 kV 1 minute (Class Ⅰ)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

SECTION 1
DISASSEMBLY

1.1 Manually removing the cassette tape

If you cannot remove the cassette tape which is loaded because of any electrical or mechanical failures, manually remove it by taking the following steps.

(1) Unplug the power cord plug from the power outlet.
(2) Refer to the disassembly procedure of the VCR and perform the disassembly of the major parts before removing the mechanism assembly. (See Fig. 1-1a.)

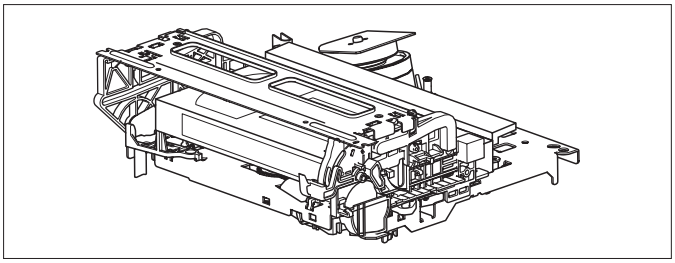


Fig. 1-1a

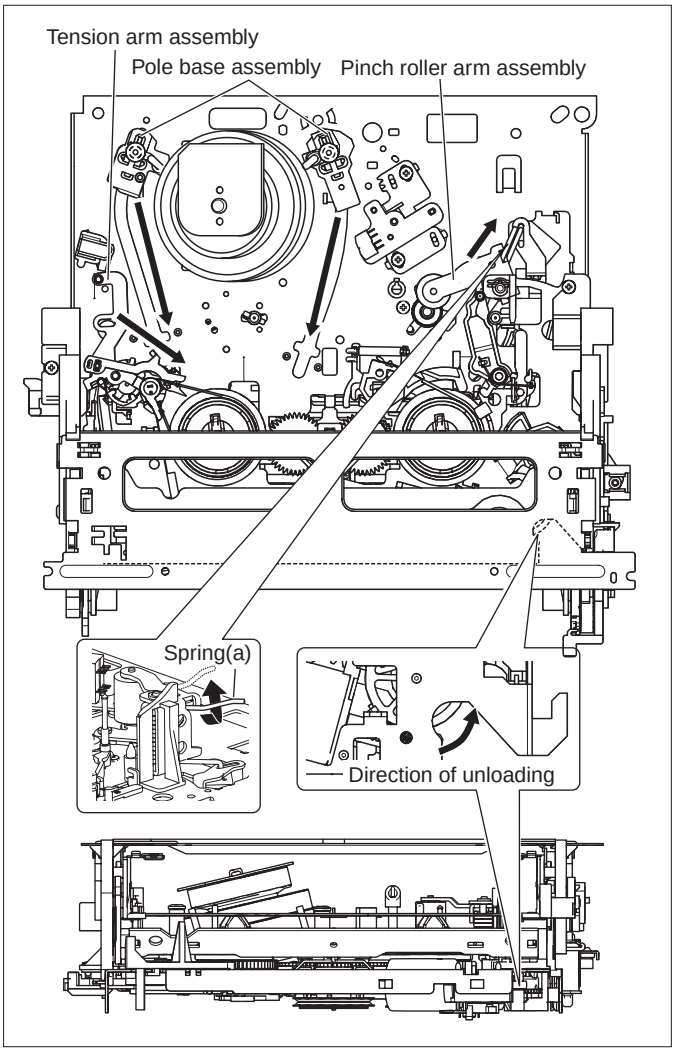


Fig. 1-1b

(3) Unload the pole base assembly by manually turning the gear of the loading motor until the pole base assembly is hidden behind the cassette lid. In doing so, hold the tape by the hand to keep the slack away from any grease. (See Fig. 1-1b.)
In case of mechanical failures, while keeping the tension arm assembly free from tension, pull out the tape on the pole base assembly. Take the spring(a) of the pinch roller arm assembly off the hook, and detach it from the tape.
(4) Remove the screw (a) of the side frame (L/R).
(5) Hold the slack tape and cassette cover together, lift the cassette tape, top frame, cassette holder and side frames (L, R) together from the rear and remove them by disengaging the hooks (a) and (b).

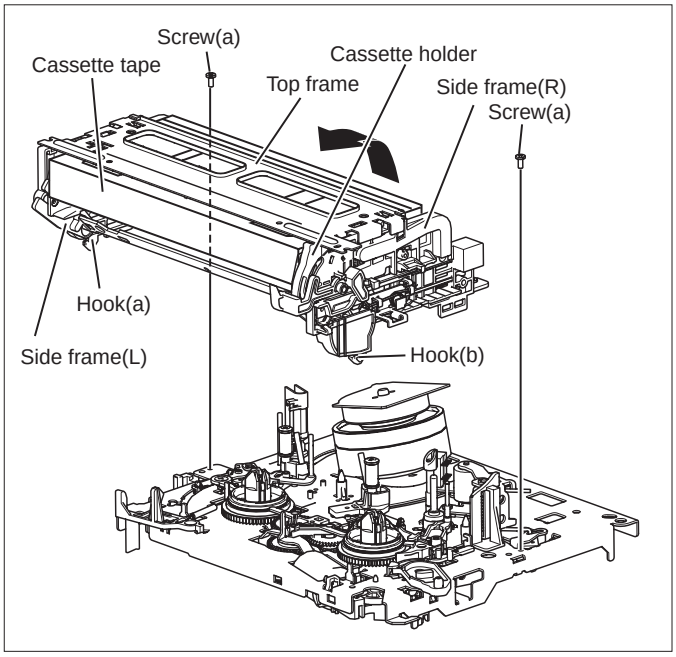


Fig. 1-1c

(6) Take up the slack of the tape into the cassette. This completes removal of the cassette tape.

1.2 Removing the major parts

1.2.1 How to read the procedure table

This table shows the steps for disassembly of the externally furnished parts and board assemblies. Reverse these steps when re-assembling them.

<Example>

Step/ Loc No.	Part Name	Fig. No.	Point	Note
[1]	Top cover, Bracket	1-3a	4(S1a),(S1b),3(L1a), 2(SD1a),(P1a),(W1a), CN1(WR1a), 2(S1c)	<Note 1a>

(1) (2) (3) (4) (5)

(1) Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order.
These numbers are also used as the identification (location) No. of parts Figures.
(2) Part name to be removed or installed.
(3) Fig. No. showing procedure or part location.
(4) Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
P= Spring, W= Washer, S= Screw, L= Locking tab, SD= Solder, CN**(WR**)= Remove the wire (WR**) from the connector (CN**).

Note:

- ***The bracketed ( ) WR of the connector symbol are assigned nos. in priority order and do not correspond to those on the spare parts list.***

(5) Adjustment information for installation

1.2.2 Disassembly procedure

Step/ Loc No.	Part Name	Fig. No.	Point	Note
[1]	Top cover	1-2-2d	3(S1a), 2(L1a)	
[2]	Front panel assembly	1-2-2d 1-2-2a	2(S2a), 4(L2a), 3(L2b), CN7001(WR2a), CN7103(WR2b)	<Note 2a> <Note 2b>
	(Adv. Jog/SW board assembly)		3(S2b), Knob assembly	
	(Front S Jack board assembly)		2(S2c)	
[3]	Mechanism assembly	1-2-2d	CN2001(WR3a), (S3a), (S3b)	<Note 2a> <Note 3a>
	(Drum Shield)		(S3f), (L3a)	<Note 3b>
	(Drum assembly)	1-2-2b 1-2-2c	CN1(WR3b), (S3c), (S3d), (S3e)	<Note 3c>
[4]	Main board assembly Rear S Jack board assembly	1-2-2d	2(L4a), (L4b), 2(L4c)	

<Note 2a>

- Be careful not to damage the connector and wire etc. during connection and disconnection.
- When connecting the flat wire to the connector, be careful with the flat wire direction.

<Note 2b>

- When reattaching the Front panel assembly, make sure that the door opener of the Side frame (R) is lowered in position prior to the reinstallation.
- When reattaching the Front panel assembly, pay careful attention to the switch lever of the Front panel assembly not to make it touch the switch knob of the Main board assembly from the side.
- When reattaching the Front panel assembly, lift the Cassette door slightly.

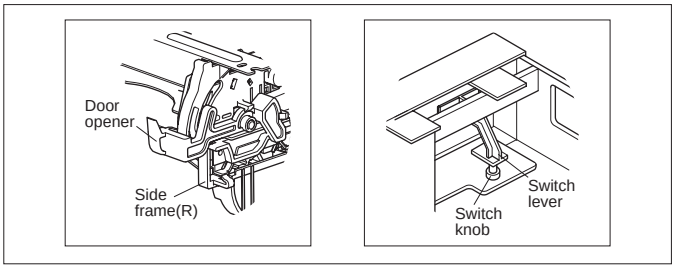


Fig. 1-2-2a

<Note 3a>

- When reattaching the Mechanism assembly, secure the screws (S3a to S3b) in the order of a, b.

<Note 3b>

- When reattaching the Mechanism assembly, be sure to align the phase of the Rotary encoder on the Main board assembly.
- When reattaching the Mechanism assembly, set the “Mechanism assembling mode”. (See “section 2 mechanism”.)
- When reattaching the Mechanism assembly to the Main board assembly, take care not to damage the sensors and switch on the Main board assembly.

<Note 3c>

- When reattaching the Drum assembly, secure the screws (S3c to S3e) in the order of c, d, e.

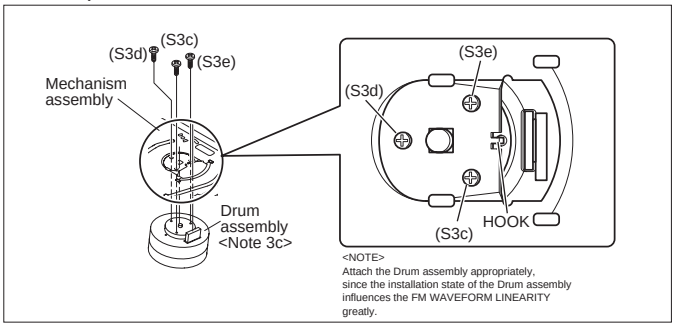


Fig. 1-2-2b

- When handling the drum assembly alone, hold it by the motor or shaft. Be careful not to touch other parts, especially the video heads. Also take care not to damage the connectors.

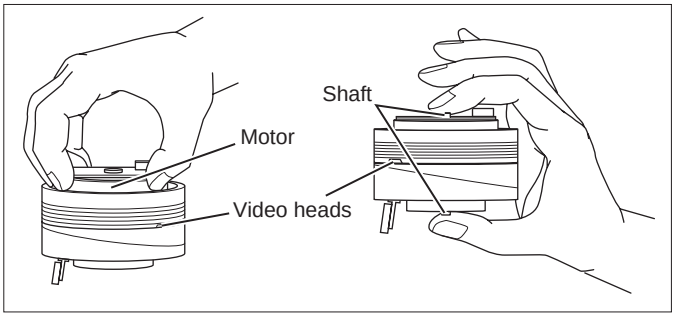


Fig. 1-2-2c

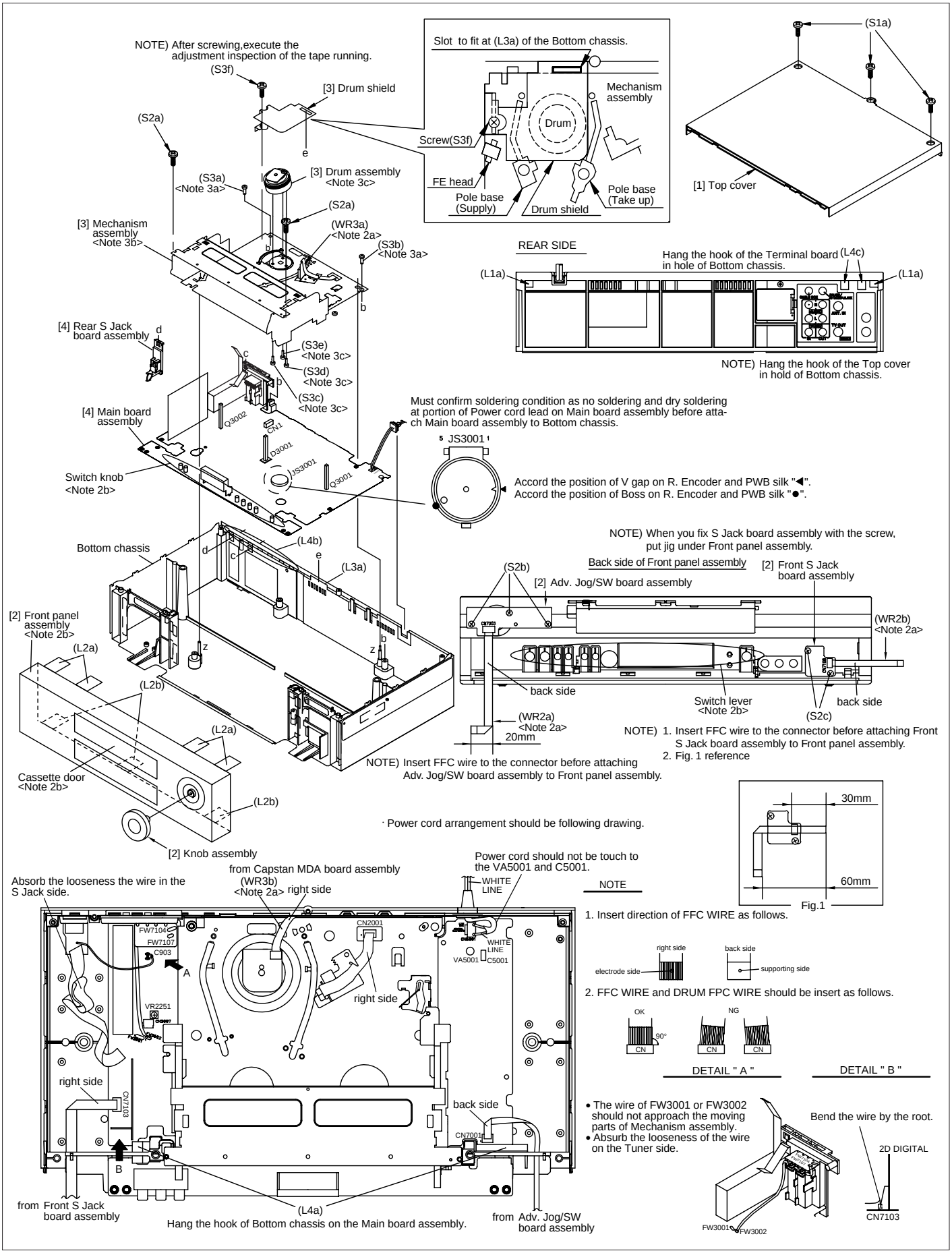

NOTE) After screwing,execute the adjustment inspection of the tape running.
(S3f)
[3] Drum shield
(S2a)
(S3a) <Note 3a>
[3] Drum assembly <Note 3c>
(S2a)
[3] Mechanism assembly <Note 3b>
(WR3a) <Note 2a>
(S3b) <Note 3a>
[4] Rear S Jack board assembly
(S3e) <Note 3c>
(S3d) <Note 3c>
(S3c) <Note 3c>
[4] Main board assembly
Switch knob <Note 2b>
Bottom chassis
(L4b)
(L3a)
[2] Front panel assembly <Note 2b>
(L2a)
(L2b)
Cassette door <Note 2b>
[2] Knob assembly
Slot to fit at (L3a) of the Bottom chassis.
Mechanism assembly
Drum
Screw(S3f)
FE head
Pole base (Supply)
Drum shield
Pole base (Take up)
(S1a)
[1] Top cover
REAR SIDE
Hang the hook of the Terminal board in hole of Bottom chassis.
(L4c)
(L1a)
NOTE) Hang the hook of the Top cover in hold of Bottom chassis.
Must confirm soldering condition as no soldering and dry soldering at portion of Power cord lead on Main board assembly before attach Main board assembly to Bottom chassis.
JS3001
Accord the position of V gap on R. Encoder and PWB silk "◀".
Accord the position of Boss on R. Encoder and PWB silk "●".
NOTE) When you fix S Jack board assembly with the screw, put jig under Front panel assembly.
Back side of Front panel assembly
[2] Front S Jack board assembly
(S2b)
[2] Adv. Jog/SW board assembly
(WR2b) <Note 2a>
back side
Switch lever <Note 2b>
back side
(S2c)
(WR2a) <Note 2a>
20mm
NOTE) Insert FFC wire to the connector before attaching Adv. Jog/SW board assembly to Front panel assembly.
NOTE) 1. Insert FFC wire to the connector before attaching Front S Jack board assembly to Front panel assembly.
2. Fig. 1 reference
· Power cord arrangement should be following drawing.
30mm
60mm
Fig.1
Absorb the looseness the wire in the S Jack side.
from Capstan MDA board assembly
(WR3b) <Note 2a>
right side
Power cord should not be touch to the VA5001 and C5001.
WHITE LINE
FW7104
FW7107
C903
CN2001
VA5001
C5001
VR2251
right side
right side
CN7103
back side
CN7001
from Front S Jack board assembly
(L4a)
Hang the hook of Bottom chassis on the Main board assembly.
from Adv. Jog/SW board assembly
NOTE
1. Insert direction of FFC WIRE as follows.
right side
back side
electrode side
supporting side
2. FFC WIRE and DRUM FPC WIRE should be insert as follows.
OK
NG
90°
CN
DETAIL " A "
DETAIL " B "
• The wire of FW3001 or FW3002 should not approach the moving parts of Mechanism assembly.
• Absurb the looseness of the wire on the Tuner side.
Bend the wire by the root.
2D DIGITAL
CN7103
FW3001
FW3002

Fig. 1-2-2d

1.3 Emergency display function

This unit saves details of the last two emergencies as the EMG history and allows the status of the VCR and the mechanism of each emergency to be shown both on the display and as OSD information.
When using the emergency function, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received).

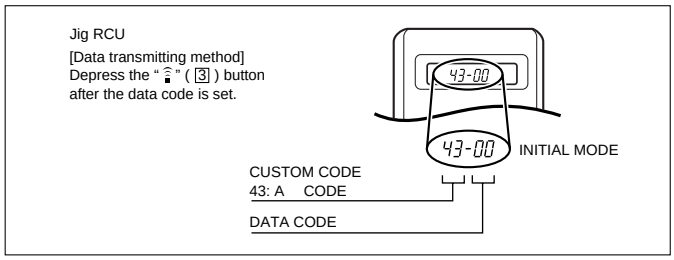


Fig. 1-3a Jig RCU [PTU94023B]

1.3.1 Displaying the EMG information

The EMG detail of information can be displayed by transmitting the code "59" from the Jig RCU.

Note:

- ***The EMG detail information <1><2> show the information on the latest EMG.***
  It becomes " – – : – – : – –" when there is no latest EMG record.

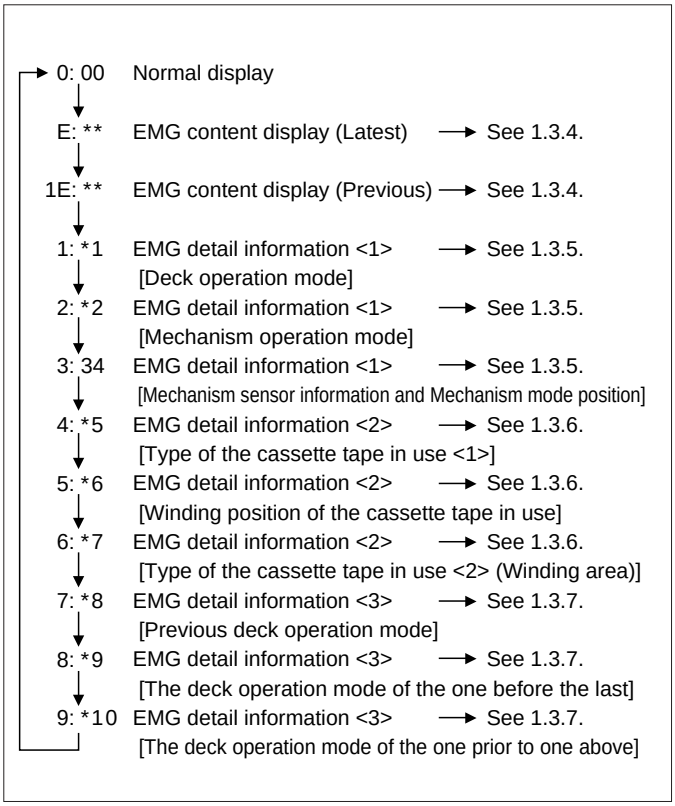

0: 00 Normal display
E: ** EMG content display (Latest) → See 1.3.4.
1E: ** EMG content display (Previous) → See 1.3.4.
1: *1 EMG detail information <1> → See 1.3.5.
[Deck operation mode]
2: *2 EMG detail information <1> → See 1.3.5.
[Mechanism operation mode]
3: 34 EMG detail information <1> → See 1.3.5.
[Mechanism sensor information and Mechanism mode position]
4: *5 EMG detail information <2> → See 1.3.6.
[Type of the cassette tape in use <1>]
5: *6 EMG detail information <2> → See 1.3.6.
[Winding position of the cassette tape in use]
6: *7 EMG detail information <2> → See 1.3.6.
[Type of the cassette tape in use <2> (Winding area)]
7: *8 EMG detail information <3> → See 1.3.7.
[Previous deck operation mode]
8: *9 EMG detail information <3> → See 1.3.7.
[The deck operation mode of the one before the last]
9: *10 EMG detail information <3> → See 1.3.7.
[The deck operation mode of the one prior to one above]

Fig. 1-3-1a EMG display of 7segment LED display model

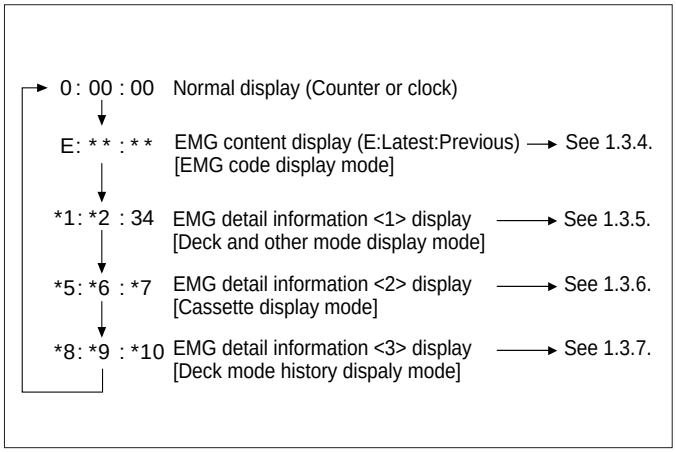

0 : 00 : 00 Normal display (Counter or clock)
E: * * : * * EMG content display (E:Latest:Previous) → See 1.3.4.
[EMG code display mode]
*1: *2 : 34 EMG detail information <1> display → See 1.3.5.
[Deck and other mode display mode]
*5: *6 : *7 EMG detail information <2> display → See 1.3.6.
[Cassette display mode]
*8: *9 : *10 EMG detail information <3> display → See 1.3.7.
[Deck mode history dispaly mode]

Fig. 1-3-1b EMG display of FDP display model

<Reference> EMG display of FDP display mode

(1) Transmit the code "59" from the Jig RCU.
The FDP shows the EMG content in the form of "E: * * : * * ".

<Example 1> E : 01 : 03
Previous EMG
Latest EMG

<Example 2> E : – – : – – ← No EMG record

(2) Transmit the code "59" from the Jig RCU again.
The FDP shows the EMG detail information <1> in the form of " *1 : *2 : 34 ".
*1 : Deck operation mode at the moment of EMG
*2 : Mechanism operation mode at the moment of EMG
3– : Mechanism sensor information at the moment of EMG
–4 : Mechanism mode position at the moment of EMG

(3) Transmit the code "59" from the Jig RCU once again.
The FDP shows the EMG detail information <2> in the form of " *5 : *6 : *7 ".
*5 : Type of the cassette tape in use <1> .
*6 : Winding position of the cassette tape in use
*7 : Type of the cassette tape in use <2> (Winding area)

(4) Transmit the code "59" from the Jig RCU once again.
The FDP shows the EMG detail information <3> in the form of "*8 : *9 : *10".
*8 : Previous deck operation mode at the moment of EMG
*9 : The deck operation mode of the one before the last at the moment of EMG
*10 : The deck operation mode of the one prior to one above at the moment of EMG

(5) Transmit the code "59" from the Jig RCU once again to reset the display.

1.3.2 Clearing the EMG history

(1) Display the EMG history.
(2) Transmit the code "36" from the Jig RCU.
(3) Reset the EMG display.

1.3.3 Details of the OSD display in the EMG display mode

During the EMG display, the OSD shows the data on the deck mode, etc. The details of the display contents are as follows.

Notes:

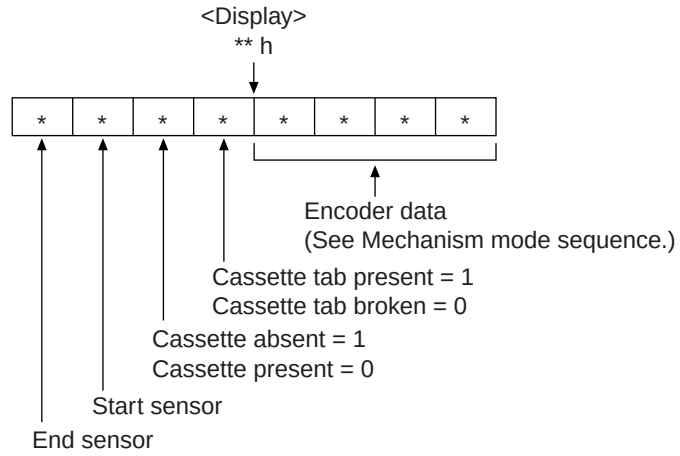
- ***The display is variable depending on the part No. of the System Control microcomputer (IC3001) built into the VCR. In the following, refer to the figure carrying the same two characters as the top two characters of the part number of your IC.***
- ***The sensor information in the OSD display contents is partially different from the mechanism sensor information in EMG detail information <1>.***

[For MN* only]

AA	BB	CC	DD	EE
FF	GG	HH	I I	J J
KK	L L	MM	NN	OO
PP	QQ	RR	SS	TT
UU	VV	WW	XX	YY

A A : Deck operation mode (See EMG detail information <1>.)
B B : Mechanism operation mode (See EMG detail of information <1>.)
C C : Mechanism transition flag
D D : Capstan motor control status
E E : Loading motor control status
F F : Sensor information (See sensor information details.)
GG : Capstan motor speed
HH : Key code (JVC code)
I I : Supply reel winding diameter data, higher 8 bits.
J J : Supply reel winding diameter data, lower 8 bits.
KK : Mechanism sensor information & mechanism mode position (See EMG detail of information <1>.)
L L : Tape speed data, higher 8 bits.
MM : Tape speed data, lower 8 bits.
N N : Cassette tape type <2>, higher 8 bits. (See EMG detail of information <2>.)
OO : Cassette tape type <2>, lower 8 bits. (See EMG detail of information <2>.)
P P : General data display area
| |
Y Y : General data display area

***FF: Sensor information details**

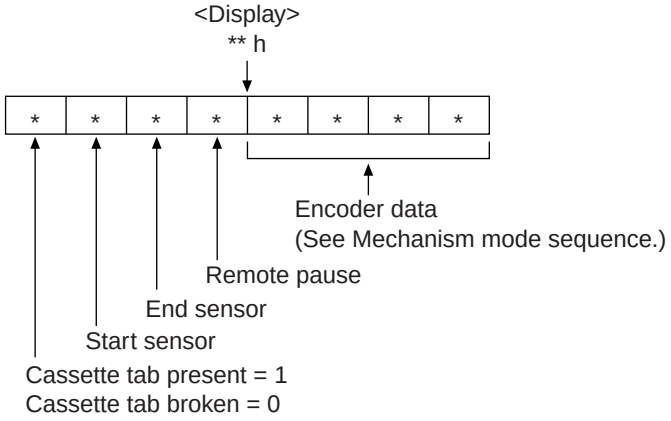


[For *HD only]

AA	BB	CC
DD	EE	FF
GGGG	HHHH	
I I	J J J J	
KKKK	L L L L	MMMM
ROM No.		

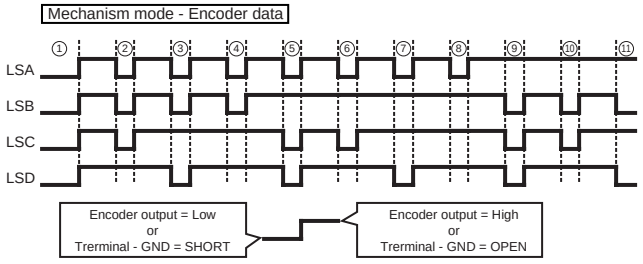
A A : Key code (JVC code)
B B : Deck operation mode (See EMG detail information <1>.)
C C : Mechanism operation mode (See EMG detail information <1>.)
D D : Sensor information (See sensor information details.)
E E : Capstan motor speed (Search, double speed)
F F : Tracking value
GGGG : Cassette tape type <2>, 16 bits. (See EMG detail information <2>.)
HHHH : Supply reel winding diameter data
I I : Capstan motor speed (FF/REW, double speed)
J J J J : Tape speed data, lower 8 bits.
K K K K : General data display area
L L L L : General data display area
MMMM : General data display area

***DD: Sensor information details**

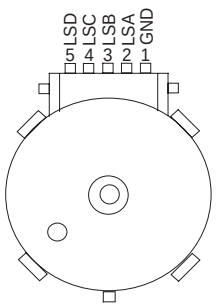


[For both MN*/HD*]

Mechanism mode sequence



No.	Position	Encoder data
①	EJECT	0 h = 0000
②	EJECT1	1 h = 0001
③	EJECT2	2 h = 0010
④	ULSTOP	3 h = 0011
⑤	UPPER	4 h = 0100
⑥	ONSTOP(PLAY)	5 h = 0101
⑦	FWD/SS	6 h = 0110
⑧	REV/SS	7 h = 0111
⑨	OFFSTOP	8 h = 1000
⑩	FFREW-BRAKE	9 h = 1001
⑪	FFREW	A h = 1010
⑫	MIDDLE	F h = 1111



1.3.4 EMG content description

Note: ***EMG contents "E08/E09" are for the model with Dynamic Drum (DD).***

FDP	CONTENT	CAUSE
E01: Loading EMG	If the mechanism mode does not change to the next mode within 4 seconds after the loading motor starts rotating in the loading direction, while the mechanism is in the after-loading position (with the tape up against the pole base), [E:01] is identified and the power is switched OFF. However, if the tape loading is not completed within 4 seconds after the loading motor starts rotating in the loading direction, the tape is simply unloaded and ejected. No EMG data is recorded in this case.	1. The mechanism is locked in the middle of the mode transition during a tape loading operation. 2. The mechanism overruns during the tape loading operation because the SYSCON cannot recognize the mechanism mode normally. This problem is due to a cause such as a rotary encoder failure. 3. Power is not supplied to the loading MDA. (M12V/Vcc/Vref/ICP are disconnected in the middle.)
E02: Unloading EMG	When the mechanism mode cannot be changed to another mode even when the loading motor has rotated for more than 4 seconds in the unloading direction, [E:02] is identified and the power is turned off.	1. The mechanism is locked in the middle of mode transition. 2. Without an eject signal being sent from the SYSCON, unloading is attempted (i.e. Ejection is attempted while the tape is still inside the mechanism.) because the SYSCON cannot recognize the mechanism mode normally. This is due to a cause such as a rotary encoder failure. (Mechanism position: UPPER) 3. Power is not supplied to the loading MDA. (M12V/Vcc/Vref/ICP are disconnected in the middle.)
E03: Take Up Reel Pulse EMG	When the falling edje of the take-up reel pulse has not been generated for more than 4 seconds in the capstan rotating mode, [E:03] is identified, the pinch rollers are turned off and stopped, and the power is turned off. In this case, however, the mechanism should be in position after tape loading. Note that the reel EMG is not detected during Slow/Frame advance operations.	1. The take-up reel pulse is not generated in the FWD transport modes (PLAY/FWD SEARCH/FF, etc.) because; 1)The idler gear is not meshed with the take-up reel gear because the mechanism malfunctions for some reason. 2)The idler gear is meshed with the take-up reel gear, but incapable of winding due to too large mechanical load (abnormal tension); 3)The reel is rotating normally but an FG pulse is not generated due to the take-up reel sensor failure. 2. The supply reel pulse is not generated in the REV transport modes (REV SEARCH/REW, etc.) because; 1) The idler gear is not meshed with the supply reel gear because the mechanism malfunctions for some reason. 2) The idler gear is meshed with the supply reel gear, but incapable of winding due to too large a mechanical load (abnormal tension); 3) The reel rotates normally but the FG pulse is not generated due to a supply reel sensor failure. 3. Power(SW5V) is not supplied to the reel sensor on the tape winding side.
E04: Drum FG EMG	When the drum FG pulse has not been input for more than 3 seconds in the drum rotating mode, [E:04] is identified, the pinch rollers are turned off and stopped, and the power is turned off.	1. The drum could not start or the drum rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high; 2) The tape is damaged or a foreign object (grease, etc.) adheres to the tape. 2. The drum FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (hall device) of the drum is faulty. 3. The drum control voltage (DRUM CTL V) is not supplied to the MDA. 4. Power (M12V) is not supplied to the drum MDA.
E05: Cassette Eject EMG	If the cassette does not reach the eject position within about 0.7 seconds after the cassette housing has started the cassette ejection operation, [E:05] is identified, the drive direction is reversed to load the tape, the mode is switched to STOP mode with the pinch roller OFF, and the power is switched OFF. During the cassette insertion process, the drive direction is reversed and the cassette is ejected if the tape is not up against the pole base within about 3 seconds after the start of the cassette pulling-in operation. If the cassette does not reach the eject position within about 0.7 seconds after the drive mode reversal operation, [E:05] is identified and the power is switched OFF immediately.	1. The cassette cannot be ejected due to a failure in the drive mechanism of the housing. 2. When the housing load increases during ejection, the loading motor is stopped because of lack of headroom in its drive torque. Housing load increasing factors: Temperature environment (low temperature, etc.), mechanism wear or failure. 3. The sensor/switch for detecting the end of ejection are not functioning normally. 4. The loading motor drive voltage is lower than specified or power (M12V) is not supplied to the motor (MDA). 5. When the user attempted to eject a cassette, a foreign object (or perhaps the user's hand) was caught in the opening of the housing.
E06: Capstan FG EMG	When the capstan FG pulse has not been generated for more than 1 second in the capstan rotating mode, [E:06] is identified, the pinch rollers are turned off and stopped, and the power is turned off.However, the capstan EMG is not detected in SLOW/STILL modes. Note that, if the part number of the System Control IC begins with "MN" or "M3", the capstan EMG is not detected even during the FF/REW operation.	1. The capstan could not start or the capstan rotation has stopped due to too large a load on the tape, because; 1) The tape tension is abnormally high (mechanical lock); 2) The tape is damaged or a foreign object (grease, etc.) is adhered to the tape (occurrence of tape entangling, etc.). 2. The capstan FG pulse did not reach the System controller CPU because; 1) The signal circuit is disconnected in the middle; 2) The FG pulse generator (MR device) of the capstans is faulty. 3. The capstan control voltage (CAPSTAN CTL V) is not supplied to the MDA. 4. Power (M12V, SW5V) are not supplied to the capstan MDA.
E07: SW Power Short-Circuit EMG	When short-circuiting of the SW power supply with GND has lasted for 0.5 second or more, [E:07] is identified, all the motors are stopped and the power is turned off.	1. The SW 5 V power supply circuit is shorted with GND. 2. The SW 12 V power supply circuit is shorted with GND.
E08: DD Initialized (Absolute Position Sensor) EMG	When DD tilting does not complete in 4 seconds, [E:08] is identified, the tilt motor is stopped and the power is turned off.	1. The absolute value sensor is defective. (The soldered parts have separated.) 2. The pull-up resistor at the absolute sensor output is defective. (The soldered parts have separated.) 3. Contact failure or soldering failure of the pins of the connector (board-to-board) to the absolute value sensor. 4. The absolute value sensor data is not sent to the System Controller CPU.
E09: DD FG EMG	When the DD FG pulse is not generated within 2.5 seconds, [E:09] is identified, the tilt motor is stopped and the power is turned off.	1. The FG sensor is defective. (The soldered parts have separated.) 2. The pull-up resistor at the FG sensor output is defective. (The soldered parts have separated.) 3. Contact failure or soldering failure of the pins of the connector (board-to-board) to the FG sensor. 4. The power (5V) to the sensor is not supplied. (Connection failure/soldering failure) 5. The FG pulse is not sent to the System Controller CPU. 6. The tilt motor is defective. (The soldered parts have separated.) 7. The drive power to the tilt motor is not supplied. (Connection failure/soldering failure) 8. The tilt motor drive MDA - IC is defective. 9. Auto-recovery of the DD tilting cannot take place due to overrun.
E0A: Supply Reel Pulse EMG	When the falling edge of the supply reel pulse has not been generated for more than 10 seconds in the capstan rotating mode, [E:0A] is identified and the cassette is ejected (but the power is not turned off). In this case, however, the mechanism should be in the position after tape loading (with the tape up against the pole base). Also note that the reel EMG is not detected during Slow/Frame advance operations.	1. The supply reel pulse is not generated in the FWD transport mode (PLAY/FWD SEARCH/FF, etc.) because; 1) PLAY/FWD or SEARCH/FF is started while the tape in the inserted cassette is cut in the middle; 2) A mechanical factor caused tape slack inside and outside the supply reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the FWD transport, so the pulse is not generated until then; 3) The reel is rotating normally but the FG pulse is not generated due to a supply reel sensor failure. 2. The take-up reel pulse is not generated in the REV transport mode (REV SEARCH/REW, etc.). 1) REV SEARCH/REW is started when the tape in the inserted cassette has been cut in the middle; 2) A mechanical factor caused tape slack inside and outside the take-up reel side of the cassette shell. In this case, the supply reel will not rotate until the tape slack is removed by the REV transport, so the pulse will not be generated until that time; 3) The reel is rotating normally but the FG pulse is not generated due to a take-up reel sensor failure. 3. The power (SW 5V) to a reel sensor is not supplied.
EU1: Head clog warning history	Presupposing the presence of the control pulse output in the PLAY mode, when the value obtained by mixing the two V.FM output channels (without regard to the A.FM output) has remained below a certain threshold level for more than 10 seconds, [E:U1] is identified and recorded in the emergency history. During the period in which the head clog is detected, the FDP shows "U:01" and the OSD repeats the "3 seconds of warning display" and the "7 seconds of noise picture display" alternately. EMG code : "E:C1" or "E:U1" / FDP : "U:01" / OSD : "Try cleaning tape." or "Use cleaning cassette." The head clog warning is reset when the above-mentioned threshold has been exceeded for more than 2 seconds or the mode is changed to another mode than PLAY.	

Table 1-3-4a

1.3.5 EMG detail information <1>

The status (electrical operation mode) of the VCR and the status (mechanism operation mode/sensor information) of the mechanism in the latest EMG can be confirmed based on the figure in EMG detail information <1> .

[FDP/OSD display]

*1 : *2 : 34

*1 : Deck operation mode at the moment of EMG
*2 : Mechanism operation mode at the moment of EMG
3– : Mechanism sensor information at the moment of EMG
–4 : Mechanism mode position at the moment of EMG

Note:

- ***For EMG detailed information <1>, the content of the code that is shown on the display (or OSD) differs depending on the parts number of the system control microprocessor (IC3001) of the VCR. The system control microprocessor parts number starts with two letters, refer these to the corresponding table.***

***1 : Deck operation mode**
[Common table of MN* and HD]

Display		Deck operation mode
MN*	HD*	
00	-	Mechanism being initialized
01	00	STOP with pinch roller pressure off (or tape present with P.OFF)
02	01	STOP with pinch roller pressure on
03	-	POWER OFF as a result of EMG
04	04	PLAY (Normal playback)
0C	0E	REC
10	11	Cassette ejected
20	22	FF
21	-	Tape fully loaded, START sensor ON, short FF
22	-	Cassette identification FWD SEARCH before transition to FF (SP x7-speed)
24	26	FWD SEARCH (variable speed) including x2-speed
2C	2E	INSERT REC
40	43	REW
42	-	Cassette identification REV SEARCH before transition to REW (SP x7-speed)
44	47	REV SEARCH (variable speed)
4C	4C	AUDIO DUB
6C	6E	INSERT REC (VIDEO + AUDIO)
84	84	FWD STILL / SLOW
85	85	REV STILL / SLOW
8C	8F	REC PAUSE
8D	-	Back spacing
8E	-	Forward spacing (FWD transport mode with BEST function)
AC	AF	INSERT REC PAUSE
AD	-	INSERT REC back spacing
CC	CD	AUDIO DUB PAUSE
CD	-	AUDIO DUB back spacing
EC	EF	INSERT REC (VIDEO + AUDIO) PAUSE
ED	-	INSERT REC (VIDEO + AUDIO) back spacing

***2 : Mechanism operation mode**
[Table of MN*]

Display	Mechanism operation mode
00	Command standby (No command to be executed)
01	Immediate Power OFF after EMG occurrence
02	Loading from an intermediate position during mechanism initialization
03	Unloading due to EMG occurrence during mechanism initialization
04	Ejecting cassette (ULSTOP to EJECT)
05	Inserting cassette (EJECT to ULSTOP)
06	Loading tape (ULSTOP to PLAY)
07	Unloading tape (PLAY to ULSTOP)
08	Transition from pinch roller ON to STOP
09	Transition from pinch roller OFF to STOP (PLAY to OFFSTOP)
0A	Transition from pinch roller OFF to STOP at power OFF
0B	Transition from pinch roller ON to STOP at power ON
0C	Transition to PLAY
0D	Transition to Search FF
0E	Transition to REC
0F	Transition to FWD STILL/SLOW
10	Transition to REV STILL/SLOW
11	Transition to Search REV
12	Transition from FF/REW to STOP
13	Transition to FF
14	Transition to REW
15	Tape end detection processing during loading
16	Short FWD/REV at tape sensor ON during unloading
17	Transition to FF/REW brake mode

[Table of HD*]

Display	Mechanism operation mode
00	STOP with pinch roller pressure off
01	STOP with pinch roller pressure on
02	U/L STOP (or tape being loaded)
04	PLAY (Normal playback)
05	PLAY (x1-speed playback using JOG)
0E	REC
11	Cassette ejected
22	FF
26	FWD SEARCH (variable speed) including x2-speed
2E	INSERT REC
43	REW
47	REV SEARCH
4C	AUDIO DUB
6E	INSERT REC (VIDEO + AUDIO)
84	FWD STILL/SLOW
85	REV STILL/SLOW
8F	REC PAUSE
AF	INSERT REC PAUSE
C7	REV SEARCH (x1-speed reverse playback using JOG)
CD	AUDIO DUB PAUSE
EF	INSERT REC (VIDEO + AUDIO) PAUSE
F0	Mechanism being initialized
F1	POWER OFF as a result of EMG
F2	Cassette being inserted
F3	Cassette being ejected
F4	Transition from STOP with pinch roller pressure on to STOP with pinch roller pressure off
F5	Transition from STOP with pinch roller pressure on to PLAY
F6	Transition from STOP with pinch roller pressure on to REC
F7	Cassette type detection SEARCH before FF/REW is being executed
F8	Tape being unloaded
F9	Transition from STOP with pinch roller pressure off to STOP with pinch roller pressure on
FA	Transition from STOP with pinch roller pressure off to FF/REW
FB	Transition from STOP with pinch roller pressure off to REC.P (T.REC,etc.)
FC	Transition from STOP with pinch roller pressure off to cassette type detection SEARCH
FD	Short REV being executed after END sensor on during unloading
FE	Tension loosening being executed after tape loading (STOP with pinch roller pressure on)
FF	Tape being unloaded

3– : Mechanism sensor information
[Common table of MN* and HD*]

Display	Mechanism sensor information			
	REC safety SW	Start sensor	End sensor	Mechansim position sensor
0-	Tab broken	ON	ON	ON
1-	Tab broken	ON	ON	OFF
2-	Tab broken	ON	OFF	ON
3-	Tab broken	ON	OFF	OFF
4-	Tab present	OFF	ON	ON
5-	Tab present	OFF	ON	OFF
6-	Tab present	OFF	OFF	ON
7-	Tab present	OFF	OFF	OFF
8-	Tab broken	ON	ON	ON
9-	Tab broken	ON	ON	OFF
A-	Tab broken	ON	OFF	ON
B-	Tab broken	ON	OFF	OFF
C-	Tab present	OFF	ON	ON
D-	Tab present	OFF	ON	OFF
E-	Tab present	OFF	OFF	ON
F-	Tab present	OFF	OFF	OFF

Tab broken = 0 Sensor ON = 0 Sensor ON = 0
Tab present = 1 sensor OFF = 1 Sensor OFF = 1

–4 : Mechanism mode position
[Common table of MN* and HD*]

Mechanism sensor information	Display	Deck operation mode	
Even number (0, 2, 4, 6, 8, A, C, E)	-0	Not established	
	-1	EJECT	EJECT position
	-2	EJECT-EJECT1	Intermodal position
	-3	EJECT1	EJECT1 position
	-4	EJECT1-EJECT2	Intermodal position
	-5	EJECT2	EJECT2 position
	-6	EJECT2-ULSTOP	Intermodal position
	-7	ULSTOP	ULSTOP position
	-8	ULSTOP-UPPER	Intermodal position
	-9	UPPER	Loading (unloading) tape
	-A	UPPER-ONSTOP	Intermodal position
	-B	ONSTOP	PLAY position
	-C	PLAY-FWD/SS	Intermodal position
	-D	FWD/SS	FWD (FWD Still/Slow) position
	-E	FWD/SS-REV	Intermodal position
	-F	REV	REV (REV Still/Slow) position
Odd number (1, 3, 5, 7, 9, B, D, F)	-0	REV-OFFSTOP	Intermodal position
	-1	OFFSTOP	Pinch roller OFF position
	-2	OFFSTOP-FFREWB	Intermodal position
	-3	FFREWB	FF/REW Brake position
	-4	FFREWB-FFREW	Intermodal position
	-5	FFREW	FF/REW position

1.3.6 EMG detail information <2>

The type of the cassette tape and the cassette tape winding position can be confirmed based on the figure in EMG detail information <2> .

[FDP/OSD display]

*5 :*6 :*7

*5 : Type of the cassette tape in use <1>
*6 : Winding position of the cassette tape in use
*7 : Type of the cassette tape in use <2> (Winding area)

Note:

- ***EMG detail information <2> is the reference information stored using the remaining tape detection function of the cassette tape. As a result, it may not identify cassette correctly when a special cassette tape is used or when the tape has variable thickness.***

***5 : Cassette tape type <1>**

Display	Cassette tape type <1>
00	Cassette type not identified
16	Large reel/small reel (T-0 to T-15/T-130 to T-210) not classified
82	Small reel, thick tape (T-120) identified/thin tape (T-140) identified
84	Large reel (T-0 to T-60) identified
92	Small reel, thick tape (T-130) identified/thin tape (T-160 to T-210) identified
93	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) not classified
C3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
D3	Small reel, thick tape/C cassette (T-0 to T-100/C cassette) being classified
E1	C cassette, thick tape (TC-10 to TC-20) identified
E2	Small reel, thick tape (T-0 to T-100) identified
E9	C cassette, thin tape (TC-30 to TC-40) identified
F1	C cassette, thick tape/thin tape (TC-10 to TC-40) not classified

Notes:

- ***Cassette tape type <1> is identified a few times during mode transition and the identification count is variable depending on the cassette tape type. If an EMG occurs in the middle of identification, the cassette tape type may not be able to be identified.***
- ***If other value than those listed in the above table is displayed, the cassette tape type is not identified.***

***6 : Cassette tape winding position**

The cassette tape winding position at the moment of EMG is displayed by dividing the entire tape (from the beginning to the end) in 21 sections using a hex number from “00” to “14”.

“00” : End of winding
“14” : Beginning of winding
“FF” : Tape position not identified

***7 : Cassette tape type <2> (Winding area)**

Display	Cassette tape type <2>		(Reference) Word data (Beginning) (End)
00	Cassette type not identified		
04 - 08	C cassette, thick tape	TC-10	(0497 - 0506) (0732 - 0858)
05 - 06	Small reel, thick tape	T-20	(05A9 - 0661)
05 - 0C	C cassette, thick tape	TC-20P	(0599 - 05FF) (0AA1 - 0C07)
06 - 0C	C cassette, thin tape	TC-40	(0623 - 063D) (0C41 - 0CC3)
06 - 0C	C cassette, thin tape	TC-30	(0611 - 0638) (0C0C - 0CB2)
07 - 08	Small reel, thick tape	T-40	(07CC - 08E5)
09 - 0B	Small reel, thick tape	T-60	(09FD - 0B78)
0C - 0D	Small reel, thick tape	T-80(DF-160)	(0C20 - 0DFC)
0D - 0F	Small reel, thick tape	T-90(DF-180)	(0D31 - 0F3E)
0E - 10	Small reel, thick tape	T-100	(0E43 - 107F)
10 - 12	Small reel, thin tape	T-140	(10E1 - 120C)
10 - 13	Small reel, thick tape	T-120(DF-240)	(1073 - 1313)
11 - 14	Small reel, thick tape	T-130	(1185 - 1429)
12 - 14	Small reel, thin tape	T-160	(12D3 - 141F)
13 - 14	Small reel, thin tape	T-210(DF-420)	(1373 - 14C3)
13 - 14	Small reel, thin tape	T-180(DF-360)	(1357 - 14C0)
13 - 14	Small reel, thin tape	T-168	(1395 - 14EE)
13 - 14	Small reel, thick tape	DF-300	(13A8 - 14CE)
15 - 16	Large reel	T-20	(1536 - 1618)
16 - 17	Large reel	T-30	(1647 - 175A)
17 - 18	Large reel	T-40	(1759 - 189C)
19 - 1B	Large reel	T-60	(1989 - 1B2F)

Note:

- ***The values of cassette tape type <2> in the above table are typical values with representative cassette tapes.***

1.3.7 EMG detail information <3>

Three deck operation modes preceding the deck operation mode in which the EMG occurs may be confirmed based on the figures in the EMG information detail <3>. For the contents of the displayed information, see the table "Deck operation mode" in section "1.3.5 EMG detail information <1>".

1.4 Service position

This unit has been designed so that the Mechanism and Main board assemblies can be removed together from the chassis assembly. Before diagnosing or servicing the circuit boards, take out the major parts from the chassis assembly.

1.4.1 How to set the “Service position”

(1) Refer to the disassembly procedure and perform the disassembly of the major parts before removing the Mechanism assembly.
(2) Remove the screws that fix the Mechanism assembly to the Chassis assembly. If any other screws are used to fix the boards, remove them also.
(3) Remove the combined Mechanism and Main board assemblies.
(4) If any other major parts are used, remove them also.
(5) Connect the wires and connectors of the major parts that have been removed in steps (1) to (4). (Refer to Fig. 1-2-2d.)
(6) Place the combined Mechanism, Main board and other board assemblies upside down.
(7) Insert the power cord plug into the power outlet and then proceed with the diagnostics and servicing of the board assembly.

Notes:

- ***Before inserting the power cord plug into the power outlet, make sure that none of the electrical parts are able to short-circuit between the workbench and the board assembly.***
- ***For the disassembly procedure of the major parts and details of the precautions to be taken, see “1.2 Removing the major parts”.***
- ***If there are wire connections from the Main board and Mechanism assemblies to the other major parts, be sure to remove them (including wires connected to the major parts) first before performing step (2).***
- ***When carrying out diagnosis and repair of the Main board assembly in the “Service position”, be sure to ground both the Main board and Mechanism assemblies. If they are improperly grounded, there may be noise on the playback picture or FDP counter display may move even when the mechanism is kept in an inoperative status.***
- ***In order to diagnose the playback or recording of the cassette tape, set the Mechanism assembly to the required mode before placing it upside down. If the mechanism mode is changed (including ejection) while it is in an upside down position the tape inside may be damaged.***
- ***For some models, the mechanism and board assemblies are attached by connectors only. When carrying out a diagnosis or repair of the boards in the “Service position”, make sure that the connectors are not disconnected.***

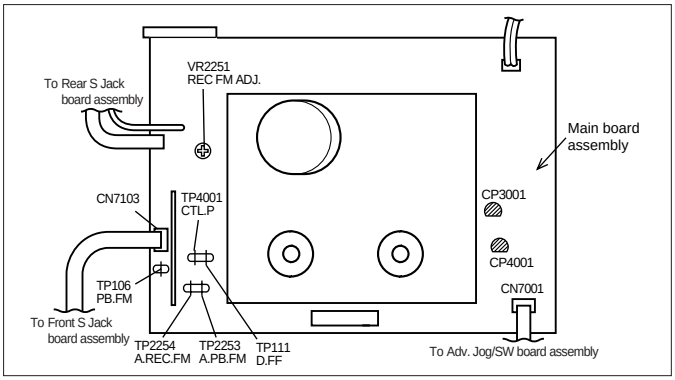


Fig. 1-4-1a

1.5 Jig RCU mode

This unit uses the following two modes for receiving remote control codes.

1) User RCU mode : Ordinary mode for use by the user.
2) Jig RCU mode : Mode for use in production and servicing.

When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). As both of the above two modes are stored in the EEPROM, it is required to set the VCR back to the User RCU mode each time that an adjustment is made or to check that the necessary operations have been completed. These modes can be set by the operations described below.

1.5.1 Setting the Jig RCU mode

(1) Unplug the power cord plug from the power outlet.
(2) Press and hold the “REC” and “PAUSE” buttons on the VCR simultaneously, while plugging the power cord plug into the power outlet.
When the VCR is set to the Jig RCU mode, the symbols (“ : ”) in the time display of the FDP are turned off.

1.5.2 Setting the User RCU mode

(1) Turn off the power.
(2) Press the “REC” and “PAUSE” buttons of the VCR simultaneously. Alternatively, transmit the code “80” from the Jig RCU.

1.6 Mechanism service mode

This model has a unique function to enter the mechanism into every operation mode without loading of any cassette tape. This function is called the “Mechanism service mode”.

1.6.1 How to set the “Mechanism service mode”

(1) Set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received).
(2) Transmit the code “E5” from the Jig RCU.
(3) Release the lug of the Cassette holder and then slide the Cassette holder toward the direction where the Cassette holder is loaded by manually.
(4) The cassette holder lowers and, when the loading has completed, the mechanism enters the desired mode.
When the VCR is set to the Mechanism service mode, the symbols (“Timer”) in the FDP (LED) are blinked.

1.6.2 How to exit from the "Mechanism service mode"

(1) Unplug the power cord plug from the power outlet.

1.7 Maintenance and inspection

1.7.1 Cleaning

Regular cleaning of the transport system parts is desirable but practically impossible. So make it a rule to carry out cleaning of the tape transport system whenever the machine is serviced.
When the video head, tape guide and/or brush get soiled, the playback picture may appear inferior or at worst disappear, resulting in possible tape damage.

Note:

- ***Absolutely avoid sweeping the upper drum vertically as this will cause damage to the video head.***

(1) When cleaning the upper drum (especially the video head), soak a piece of closely woven cloth with alcohol and while holding the cloth onto the upper drum by the fingers, turn the upper drum counterclockwise.
(2) To clean the parts of the tape transport system other than the upper drum, use a piece of closely woven cloth or a cotton swab soaked with alcohol.
(3) After cleaning, make sure that the cleaned parts are completely dry before using the cassette tape.

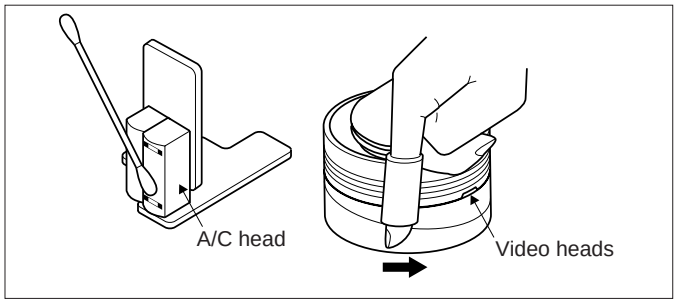


Fig. 1-7-1a

1.7.2 Lubrication

With no need for periodical lubrication, you have only to lubricate new parts after replacement. If any oil or grease on contact parts is soiled, wipe it off and newly lubricate the parts.

Note:

- ***See the "mechanism assembly" diagram of the "parts list" for the lubricating or greasing spots, and for the types of oil or grease to be used.***

1.7.3 Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning, lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions. However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time, even if the set is not used.

System	Parts name	Operation hours	
		1000H	2000H
Tape transport	Drum assembly	C,X	X
	A/C head	C,X	C,X
	Pinch roller arm assembly	C	C
	Full erase head	C	C
	Tension arm assembly	C	C
	Capstan motor (Shaft)	C	C
	Guide arm assembly	C	C
Drive	Capstan motor		X
	Capstan brake assembly		X
	Main brake assembly		X
	Belt (Capstan)	X	X
	Loading motor		X
	Clutch unit		X
	Worm gear		X
	Control plate		X
Other	Rotary encoder		X

C : Cleaning
X : Inspection or Replacement if necessary

SECTION 2
MECHANISM

2.1 Before disassembling

2.1.1 Notes

This model's mechanism relates closely to the rotary encoder and system control circuit (the rotary encoder is meshed with the control cam).
The system control circuit detects the mechanism condition using the rotary encoder's phase (internal switch phase). Therefore, the parts such as the rotary encoder, control plate, loading gear and control cam need to be installed correctly in order for the mechanism to operate properly. (For the mechanism phase adjustment, refer to the installation of each part.)

- For the disassembly procedure of the major parts of the main unit and notes, refer to the "section 1 disassembly".
- Before using a soldering iron, be sure to disconnect the power plug from the AC outlet.
- Do not touch any of the adjustment points until a defect position is specified.
- When plugging or unplugging the connector, be sure not to damage the wire.
- Be sure the springs are hooked all the way around and in the correct direction.
- When performing repairs, take care not to damage a catch, etc.

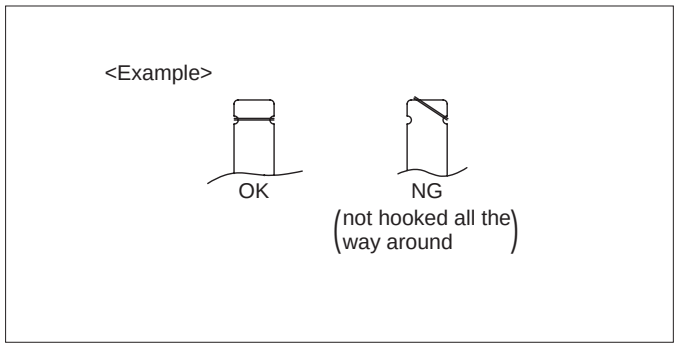


Fig. 2-1-1a

2.1.2 Mechanism operation check

When the mechanism is operated without a cassette loaded, operate the mechanism in the mechanism service mode. (Refer to the "section 1 disassembly".)

2.1.3 Setting the mechanism assembling mode

The mechanism-assembling mode is provided with this mechanism. When disassembling and assembling, it is required to engage this mode.
Set the mode by adopting the following procedures.

(1) Remove the mechanism assembly using the disassembling procedure.
(2) Turn gear (a) of the loading motor manually to set the mechanism assembly to the eject end mode. Make sure that the main deck is connected to the guide hole (a) of the drive lever and the seal (a) of the main deck is connected to the mark "E" of the control plate. This condition is called the mechanism-assembling mode.

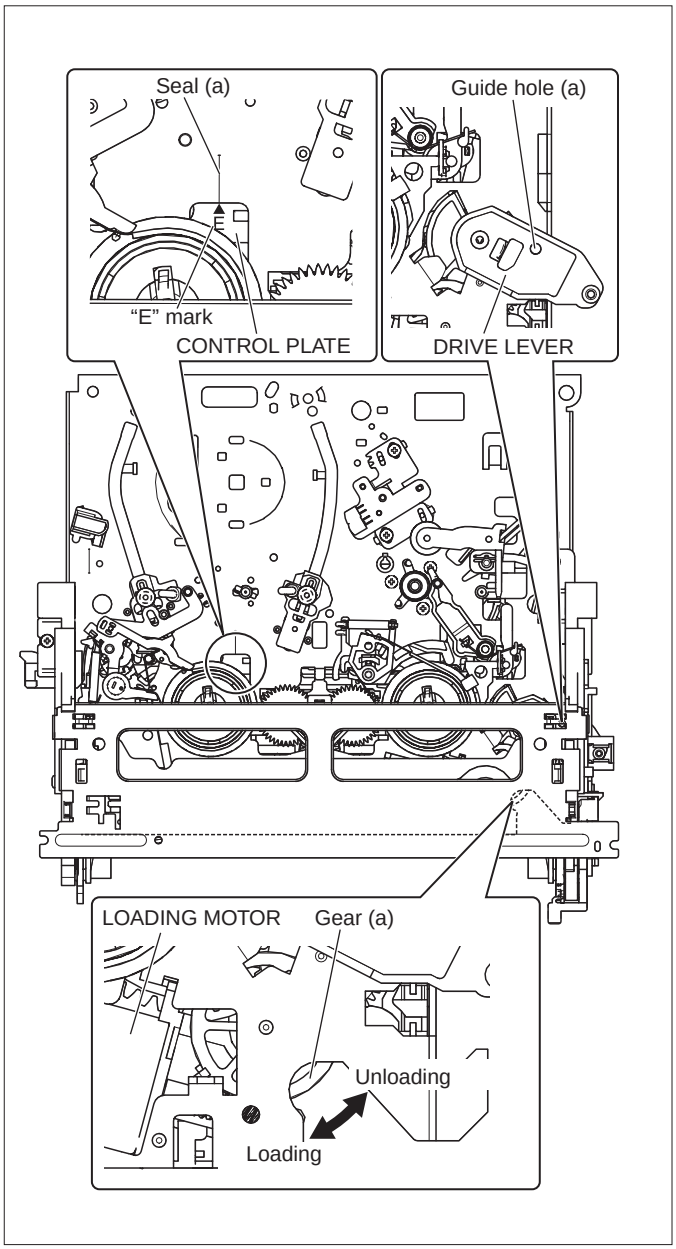


Fig. 2-1-3a

2.1.4 Layout of the main mechanism parts

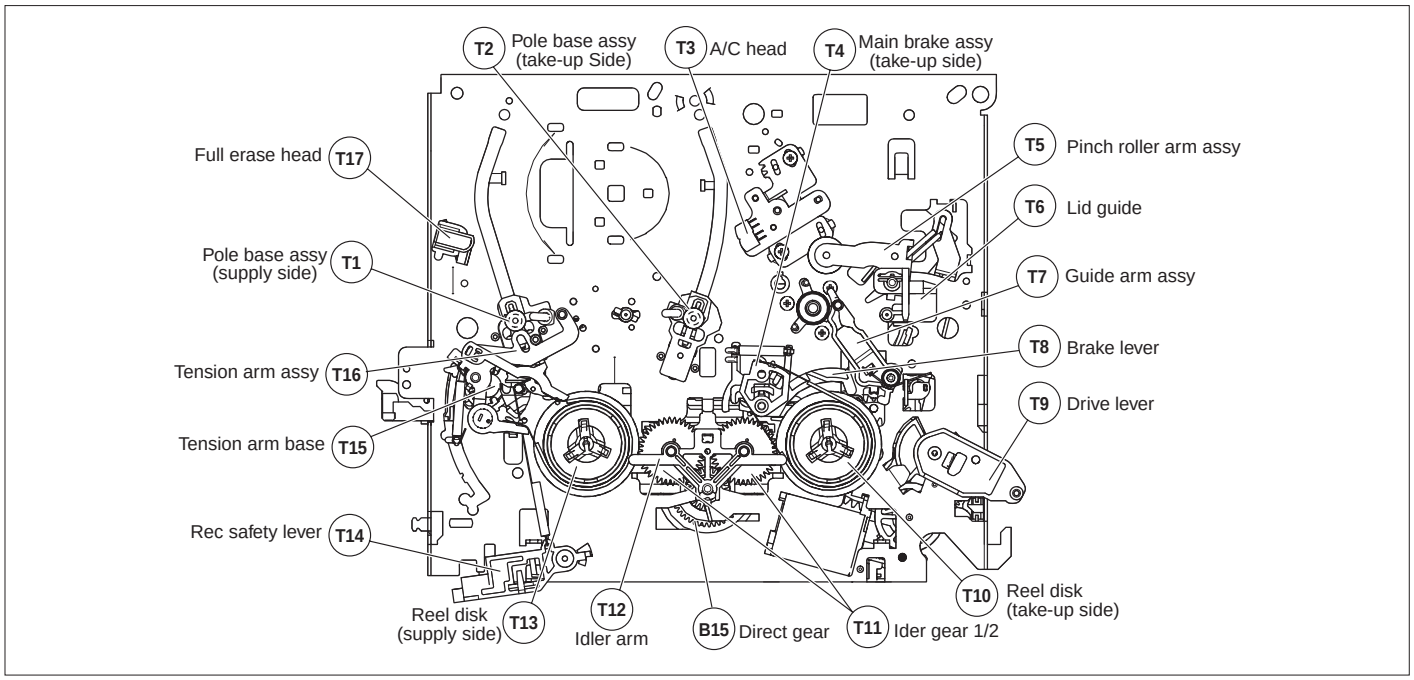

T2 Pole base assy (take-up Side)
T3 A/C head
T4 Main brake assy (take-up side)
T5 Pinch roller arm assy
T6 Lid guide
T7 Guide arm assy
T8 Brake lever
T9 Drive lever
T10 Reel disk (take-up side)
T11 Ider gear 1/2
B15 Direct gear
T12 Idler arm
T13 Reel disk (supply side)
T14 Rec safety lever
T15 Tension arm base
T16 Tension arm assy
T17 Full erase head
T1 Pole base assy (supply side)

Fig. 2-1-4a

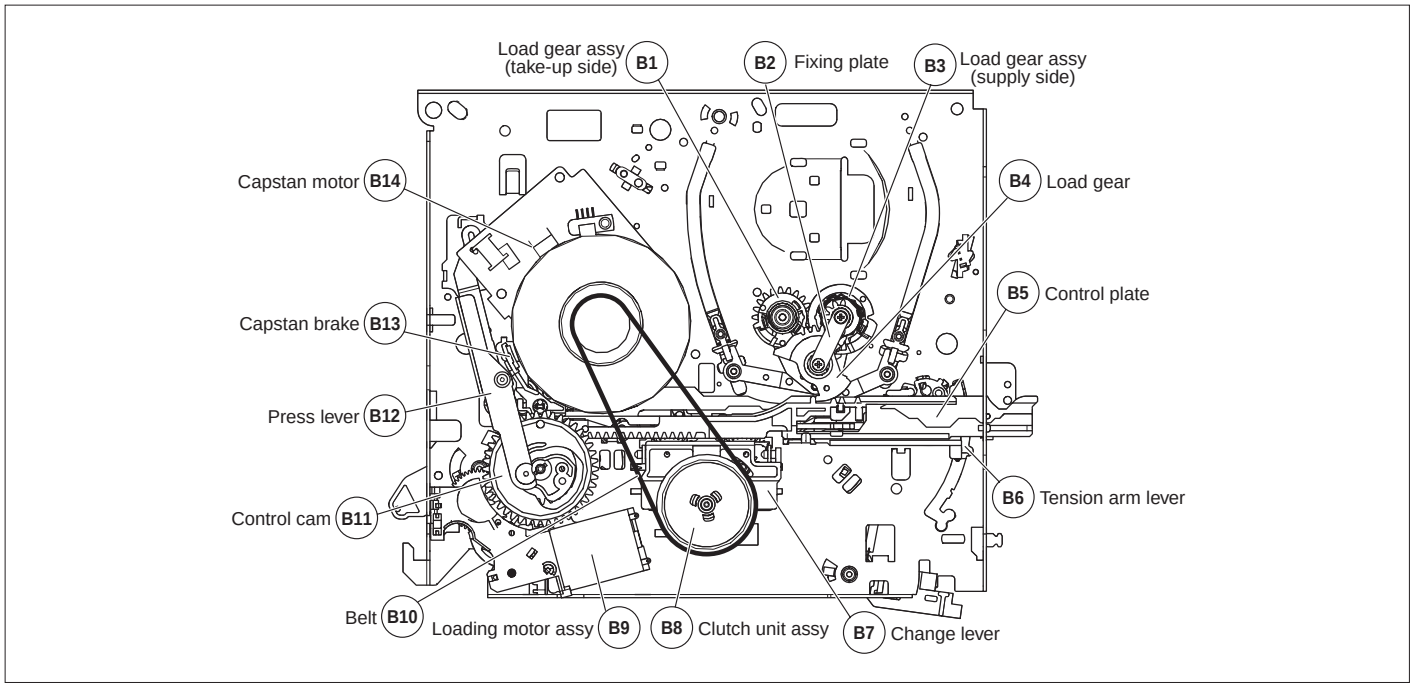


Fig. 2-1-4b

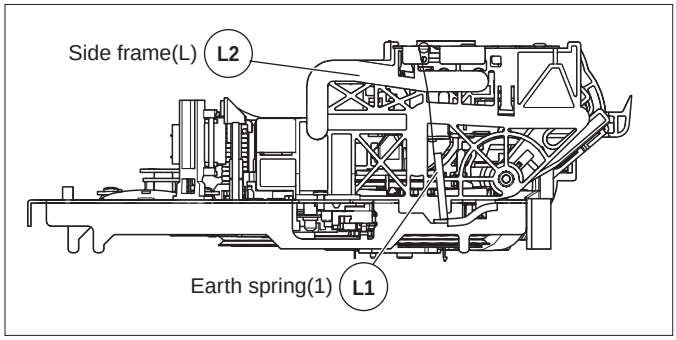


Fig. 2-1-4c

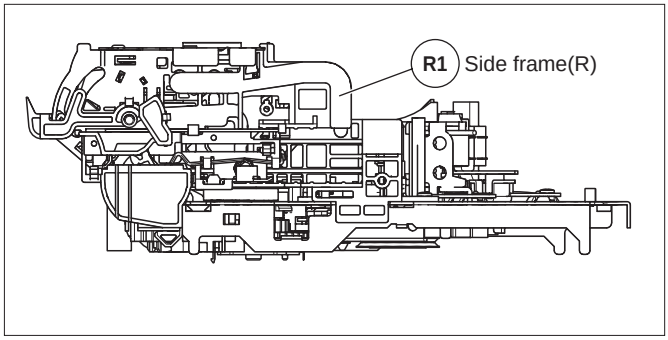


Fig. 2-1-4d

2.1.5 Disassembling procedure table

This table shows the order of parts removal when replacing each part. For replacement, remove the parts in the order of 1 to 13 shown in the table and install the parts in the reverse order.
The symbol number before each part name shows the number in the figure “Layout of the main mechanism parts”. T and B on the right of each part name show the side from which the part should be removed (T: From the front of the mechanism, B: From the rear of the mechanism, T/B: From both sides).

	Symbols and numbers			L1	-	-	L2	-	R1	T6	T12	T11	T4	T10	T16	T15	B12	B11	B13	B9	B10	B2	B4	B3	B1	B5	B8	B15
Symbols and numbers	Removal parts / (Reference items) Replacement parts	Front(T)/Back(B) of mechanism	Number of removal steps	Earth spring (1)	Top frame	Cassette holder	Side frame (L)	Drive arm	Side frame (R)	Lid guide	Idler arm	Idler gear 1/2	Main brake (T)	Reel disk (T)	Tension arm	Tension arm base	Press lever	Control cam	Capstan brake assy	Loading motor assy	Belt	Fixing plate	Load gear	Loading gear assy (S)	Loading gear assy (T)	Control plate	Clutch unit	Direct gear
L1	2.1 Earth spring (1)	T	1																									
-	2.1 Top frame	T	2	1																								
-	2.1 Cassette holder	T	3	1	2																							
L2	2.1 Side frame (L)	T	3	1	2																							
-	2.1 Drive arm	T	5	1	2	3	4																					
R1	2.1 Side frame (R)	T	3	1	2																							
T3	2.2 A/C head	T	1																									
T17	- FE head	T/B	1																									
T7	2.3 Guide arm assy	T	1																									
T6	2.3 Lid guide	T	1																									
T5	2.3 Pinch roller arm assy	T	2							1																		
T12	2.4 Idler arm	T	4	1	2	3																						
T11	2.4 Idler gear 1/2	T	5	1	2	3					4																	
T4	2.5 Main brake assy (T)	T	6	1	2	3					4	5																
T10	2.5 Reel disk (T)	T	7	1	2	3					4	5	6															
T16	2.5 Tension arm	T	6	1	2	3					4	5																
T13	2.5 Reel disk (S)	T	7	1	2	3					4	5			6													
T15	2.5 Tension arm base	T	7	1	2	3					4	5			6													
-	- T-up head	T	8	1	2	3					4	5			6	7												
-	- T-up lever	T	8	1	2	3					4	5			6	7												
T8	2.5 Brake lever	T	8	1	2	3					4	5	6	7														
T14	2.5 Rec safety lever	T	7	1	2	3	4	5	6																			
B12	2.6 Press lever	B	1																									
B11	2.6 Control cam	B	2														1											
B13	2.6 Capstan brake assy	B	3														1	2										
B9	2.6 Loading motor assy	B	4														1	2	3									
B10	2.7 Belt	B	1																									
B14	2.7 Capstan motor	T/B	2																		1							
-	- Wire holder	T/B	1																									
B2	2.7 Fixing plate	B	1																									
B4	2.7 Load gear	B	2																			1						
B3	2.7 Loading gear assy(S)	B	3																			1	2					
B1	2.7 Loading gear assy(T)	B	4																			1	2	3				
T1	- Pole base assy(S)	T/B	4																			1	2	3				
T2	- Pole base assy(T)	T/B	5																			1	2	3	4			
-	- Load gear base	B	5																			1	2	3	4			
B5	2.7 Control plate	B	6														1	2			3	4	5					
T9	- Drive lever	T/B	10	1	2	3	4	5	6								7	8		9								
B8	2.8 Clutch unit	B	2																		1							
B15	2.8 Direct gear	B	3																		1						2	
B7	- Change lever	T/B	6								1	2									3						4	5
B6	- Tension arm lever	T/B	14	1	2	3					4	5			6	7	8	9			10	11	12			13		

2.2 Replacement of the main mechanism parts

2.2.1 Cassette holder

2.2.1.1 Removal

(1) Remove the screws (a) and (b).
(2) Hold up the top frame, cassette holder assembly, drive arm assembly and side frames (L/R) all together and remove them by releasing the hooks (a) and (b).

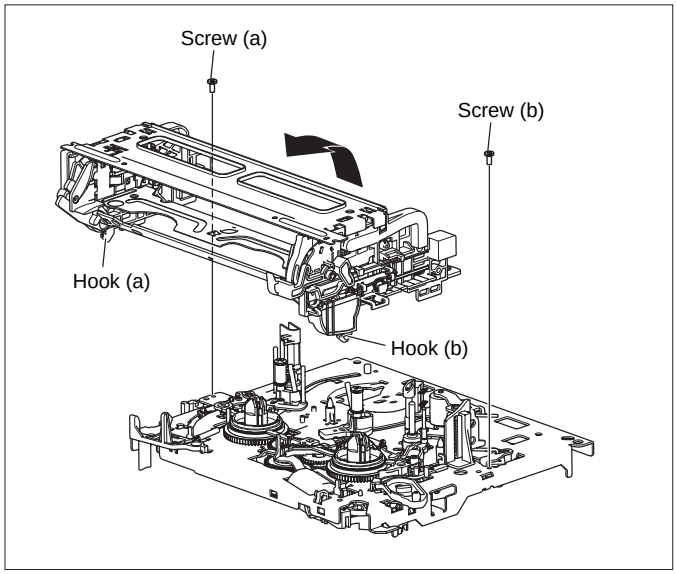


Fig. 2-2-1a

2.2.1.2 Installation (phase adjustment)

(1) Turn gear (a) of the loading motor assembly so that the main deck connects to the guide hole (a) of the drive lever.
(2) Hook the main deck to hooks (a) and (b).
(3) Place the projection of the drive lever to section (a) of the side frame (R) and install the cassette holder to the main deck. Make sure that the bosses of the side frame (L/R) connect with the holes (a) and (b) of the main deck.
(4) Secure screws (a) and (b).

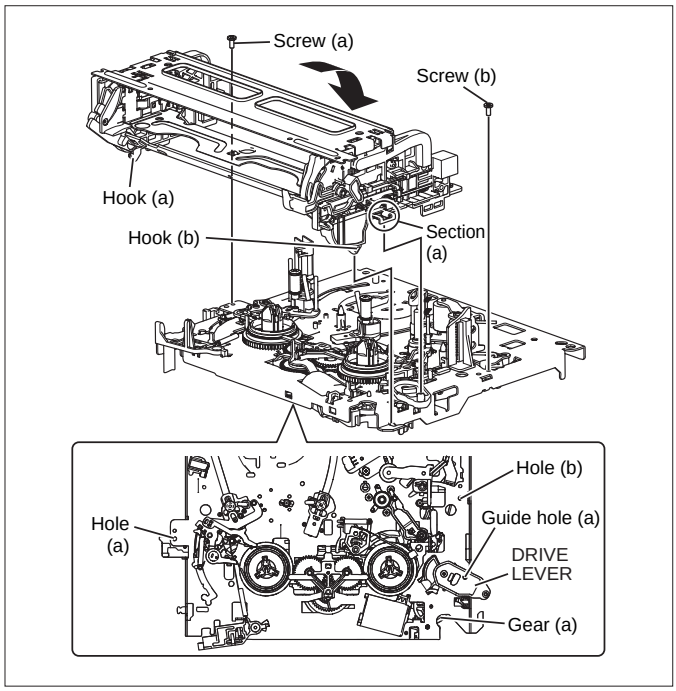


Fig. 2-2-1b

2.2.1.3 Disassembling

(1) Release hook (a) to remove the earth spring (1) from the top frame.
(2) Release the catches (a) and (b) and pull the top frame in the direction shown by the arrow (a) to remove it.
(3) Pull out the side frame (R).
(4) Pull out the cassette holder assembly and drive arm assembly from the side frame (L).

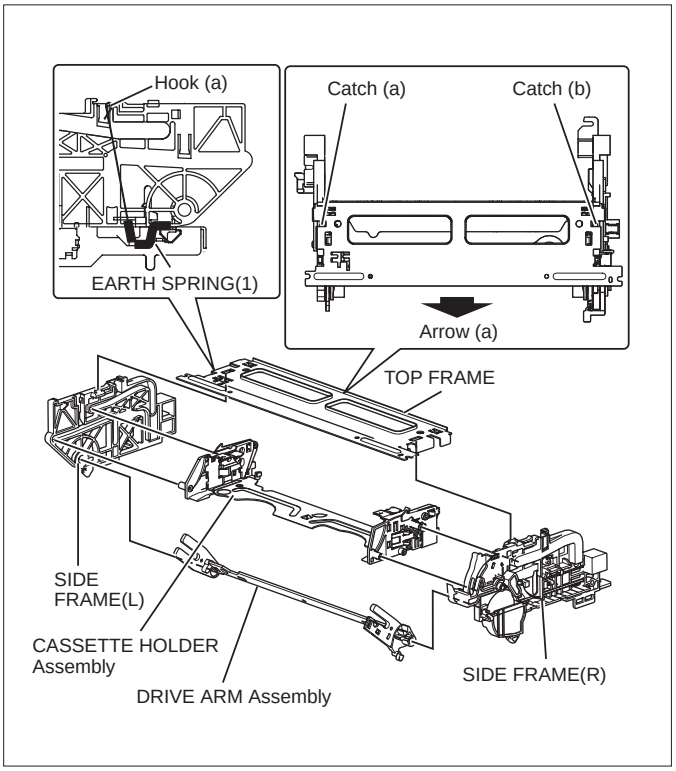


Fig. 2-2-1c

2.2.1.4 Assembling (installation and phase adjustment)

(1) Turn gear (a) of the loading motor assembly so that the main deck connects to the guide hole (a) of the drive lever.
(2) Place the projection of the drive lever on section (a) of the side frame (R) and install the side frame (R) to the main deck.
(3) Secure screw (b).
(4) Place section (b) of the drive arm on the gear of the side frame (R). Make sure that the pin of the door opener connects with section (c) of the drive arm.
(5) Place the drive arm on section (d) of the side frame (L) and install the side frame (L) on the main deck. Be sure to connect the earth spring (1) to the side frame (L).
(6) Secure screw (a).
(7) Turn gear (a) of the loading motor assembly until the drive arm is vertical.
(8) Place the slit of the side frame (L/R) at the foot of the cassette holder assembly and install the cassette holder.
(9) Place the top frame on the position guide (a) of the side frame (L/R) and push it in the direction shown by the arrow (a) for installation.
(10) Hook the earth spring (1) to the hook (a) of the top frame.

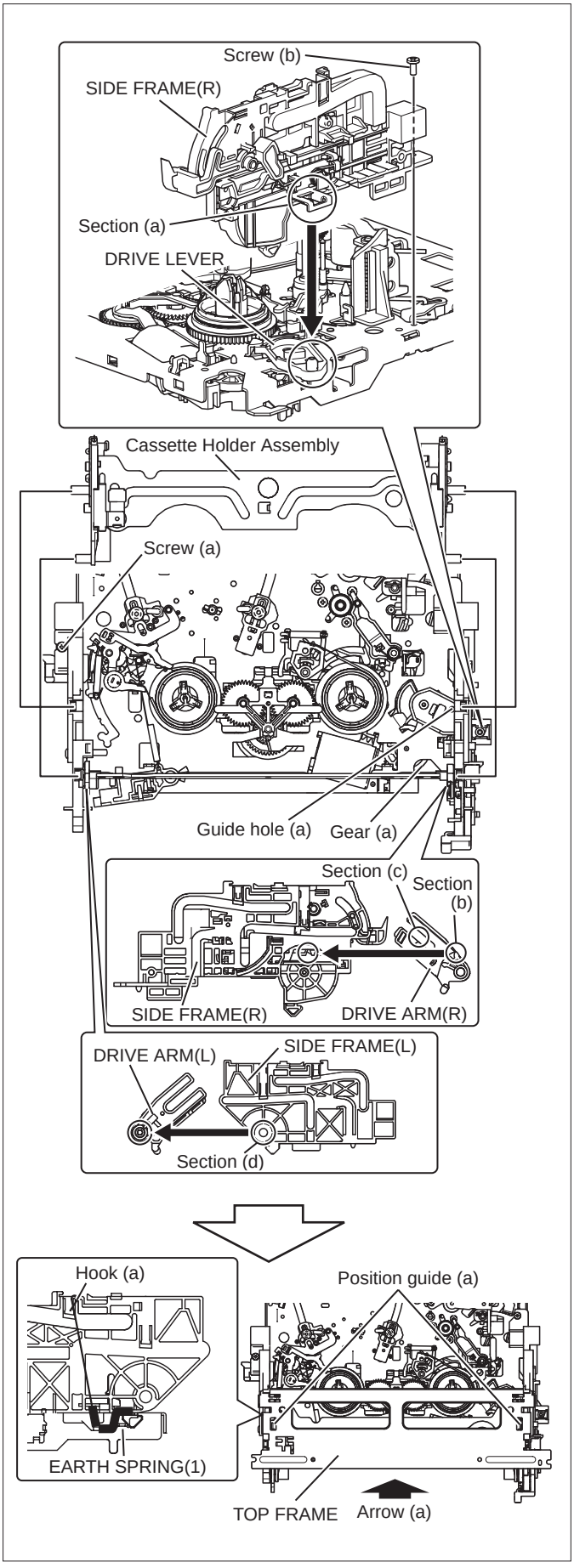


Fig. 2-2-1d

2.2.2 A/C head

2.2.2.1 Removal

(1) Remove screws (a) and (b).
(2) Remove the A/C head together with the head base.
(3) Remove the screws (c), (d) and (e) to remove the spring (a) and the A/C head from the head base.

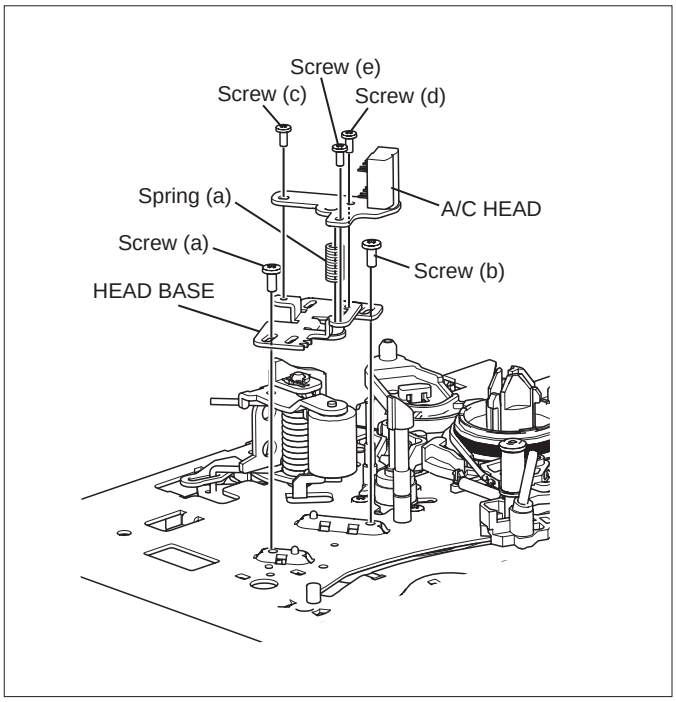


Fig. 2-2-2a

2.2.2.2 Installation (initial setting)

To install the A/C head to the head base, secure the screws in the order of (c), (d) and (e). To make the adjustment easy, temporarily elevate the A/C head.

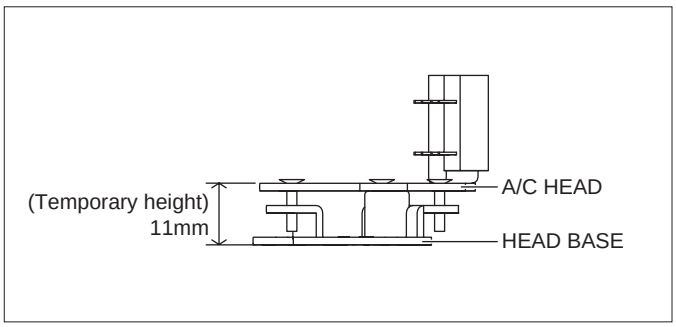


Fig. 2-2-2b

2.2.3 Guide arm, pinch roller arm

2.2.3.1 Removal

(1) Remove the spring (a) from the hook (a) and detach the guide arm assembly.
(2) Release the catch (a) to remove the lid guide.
(3) Remove the spring (b) from the hook (b) and detach the pinch roller arm assembly.

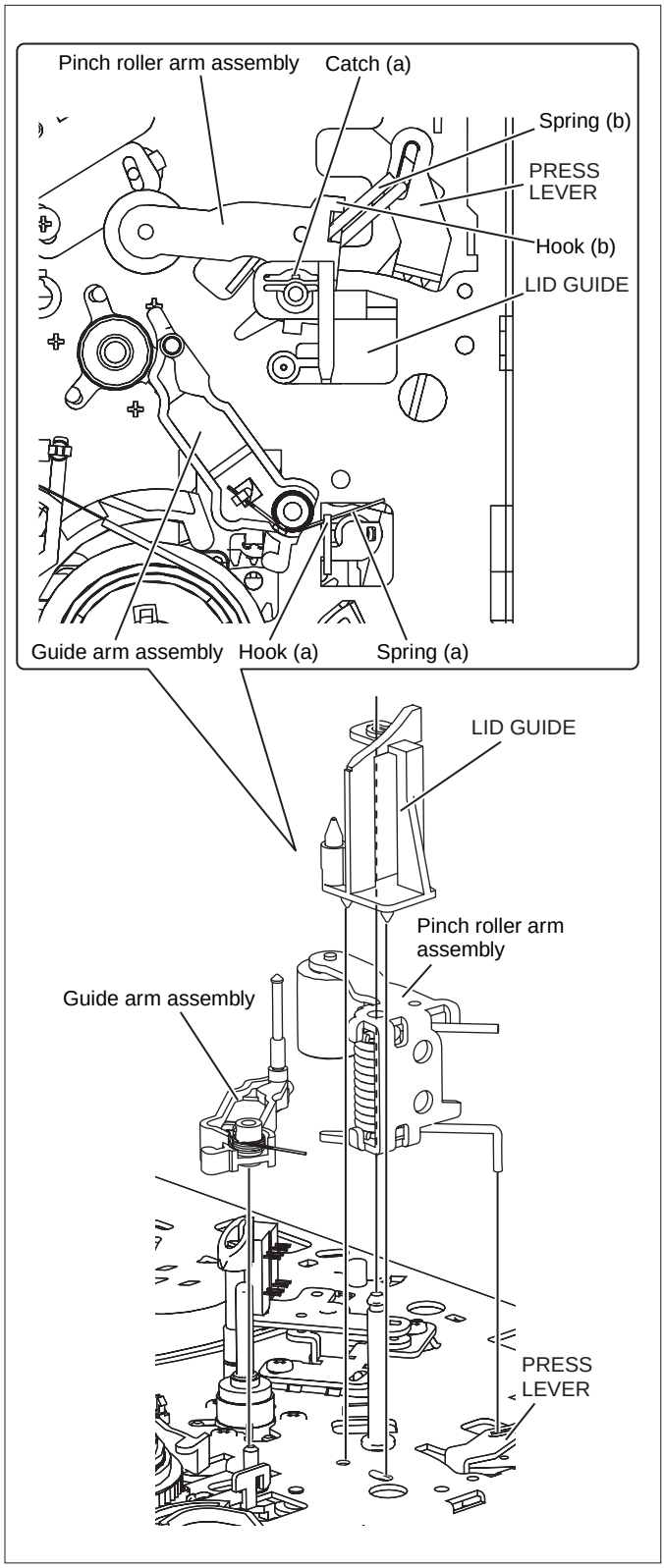


Fig. 2-2-3a

2.2.4 Idler arm, idler gear 1/2

2.2.4.1 Removal

(1) Release the catches (a) and (b) to detach the idler arm.
(2) Detach the idler gear 1/2.

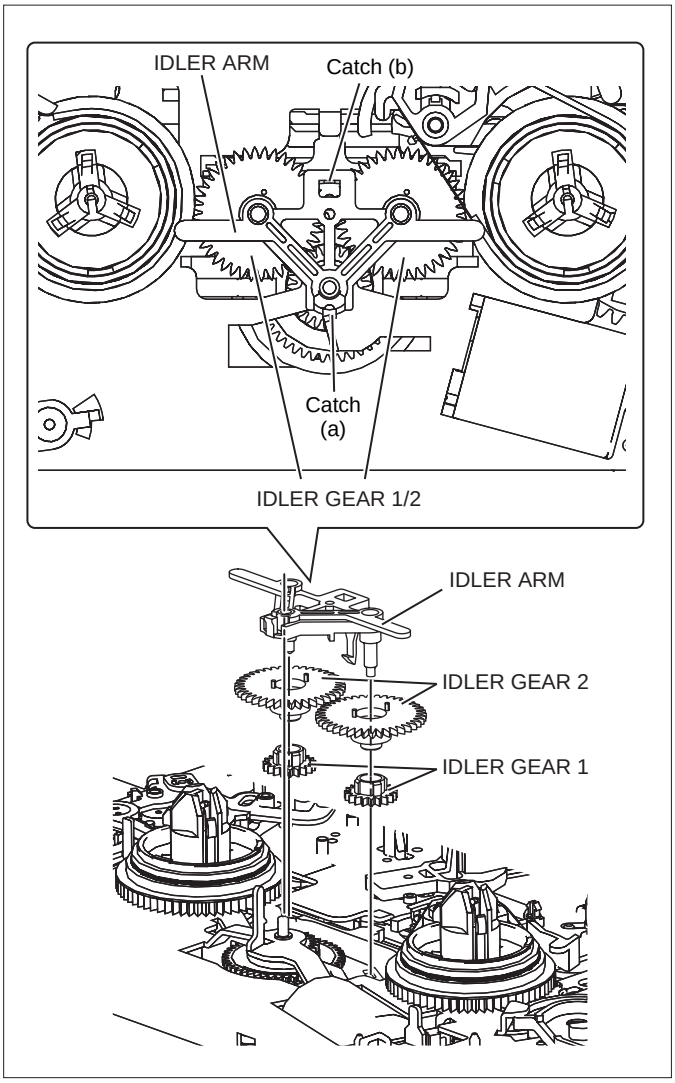


Fig. 2-2-4a

2.2.5 Main brake (T), brake lever, tension arm, reel disk (S/T), Rec safety lever

2.2.5.1 Removal

(1) Remove the spring (a). (Detach section (b) of the spring (a).)
(2) Release the catch (a) to detach the main brake (T).
(3) Release the catch (b) to detach the reel disk (T) and the spacer.
(4) Lift up and turn section (b) of the brake lever counterclockwise to remove the brake lever.
(5) Remove the spring (b) from the hook (a).
(6) Release the catch (c) to detach the tension arm.
(7) Release the catch (d) to detach the reel disk (S) and the spacer.
(8) Remove the spring (c) from the hook (b).
(9) Turn the tension arm base in the direction shown by arrow (a) to release catch (e). Place the projections of the tension arm base to the holes (a) to detach the tension arm base.
(10) While releasing the catch (f), turn the Rec safety lever counterclockwise to remove it.

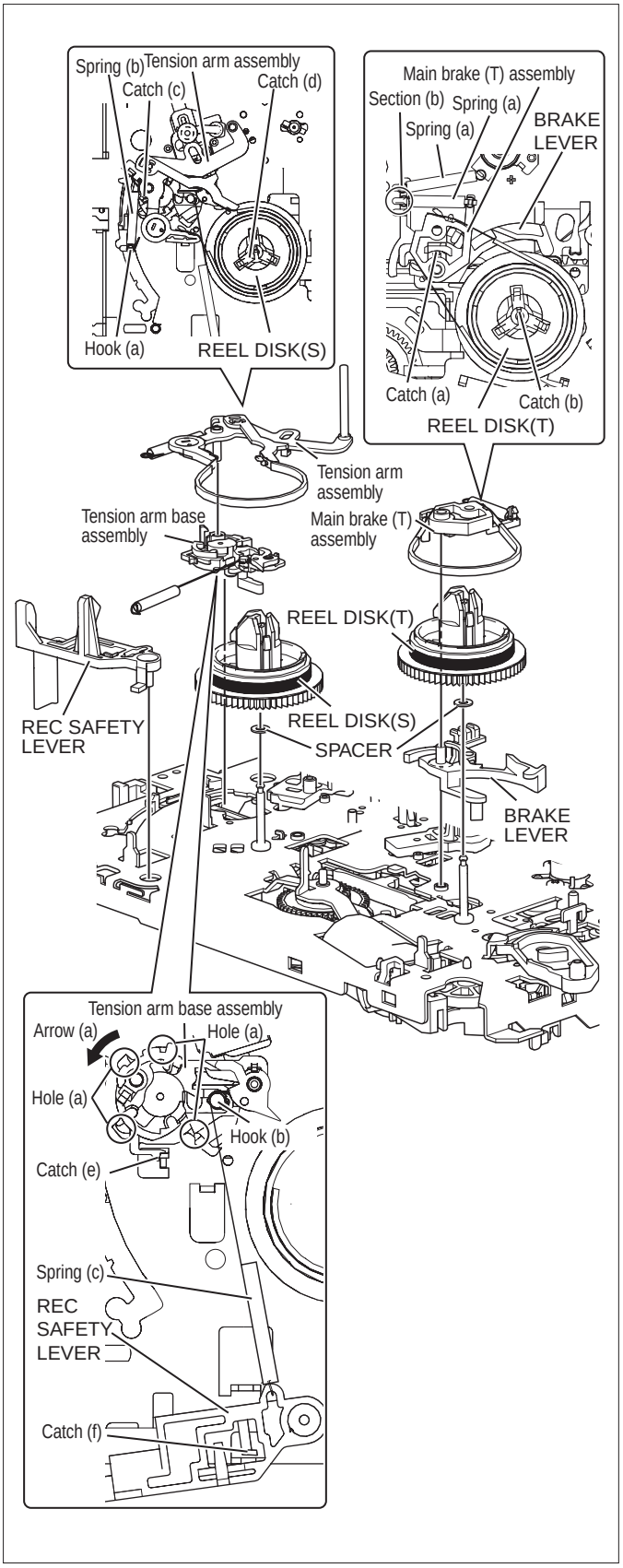


Fig. 2-2-5a

2.2.6 Press lever, control cam, capstan brake assembly, loading motor assembly

2.2.6.1 Removal

(1) Remove the slit washer (a) to detach the press lever.
(2) Release the slit washer (b) to detach the control cam.
(3) Release the catch (b) to detach the capstan brake assembly.
(4) Remove the solder (a).
(5) Remove the screw (a).
(6) Release the catches (c) and (d) to detach the loading motor assembly.

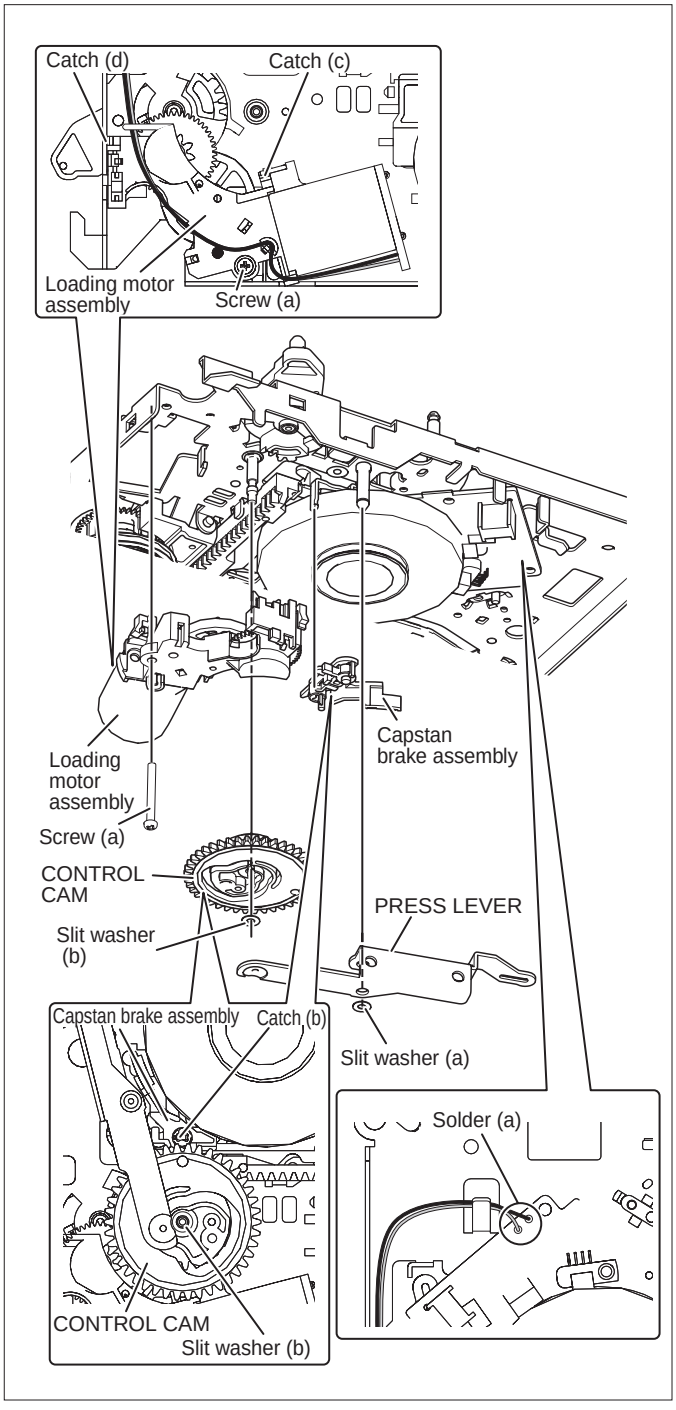


Fig. 2-2-6a

2.2.6.2 Installation (phase adjustment)

(1) Attach the loading motor assembly to the main deck.
(2) Secure the screw (a).
(3) Solder the wire to section (a).
(4) Arrange the wire along with the position guide (b).
(5) Attach the capstan brake assembly to the main deck.
(6) Place the main deck on the guide hole (a) of the control plate.
(7) Place the main deck on the guide hole (b) of the drive lever.
(8) Place the main deck no guide hole (c) of the control cam to install the control cam.
(9) Move the capstan brake in the direction shown by the arrow (a) to attach the press lever to the shaft (a). Make sure that the boss of the press lever fits in the control cam, and that the shaft (b) of the pinch roller arm assembly connects with the hole of the press lever.
(10) Attach slit washer (a) to shaft (a).

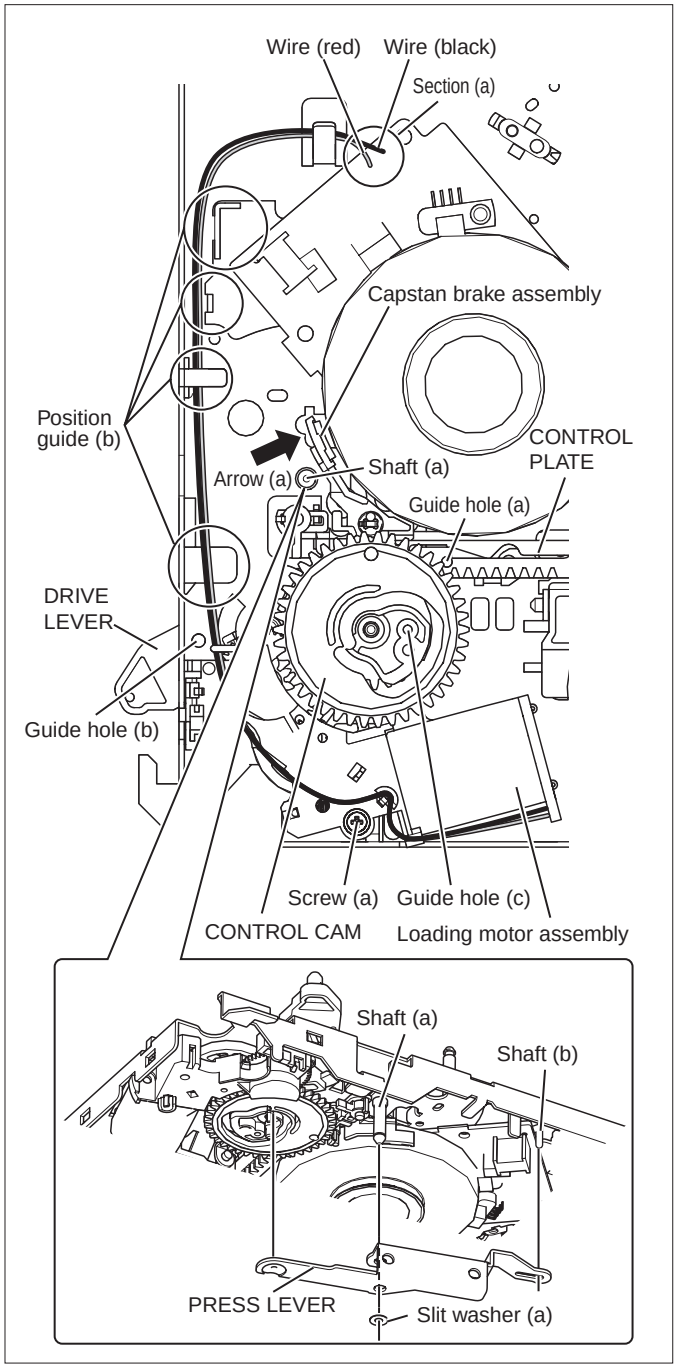


Fig. 2-2-6b

Note:

- **When replacing the worm bearing of the loading motor assembly, attach it according to the following specification. If worm bearing is not attached correctly, a mechanism noise may occur. (See Fig. 2-2-6c)**

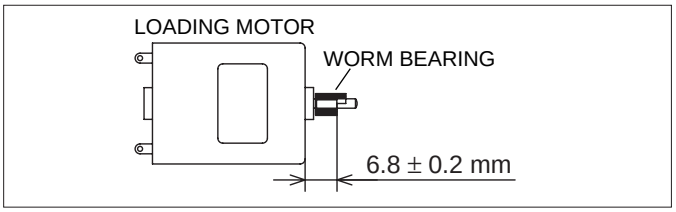


Fig. 2-2-6c

2.2.7 Capstan motor, load gear, control plate

2.2.7.1 Removal

(1) Detach the belt.
(2) Check that the FFC connector on the drum is disconnected.
(3) Release the catch (a) to remove the FFC wire.
(4) Remove the screws (a) to detach the capstan motor.
(5) Remove the screws (b) to detach the fixing plate.
(6) Release the catch (b) to detach the load gear.
(7) Turn the load gear (S/T) in the loading direction to detach it.
(8) Remove the control plate.

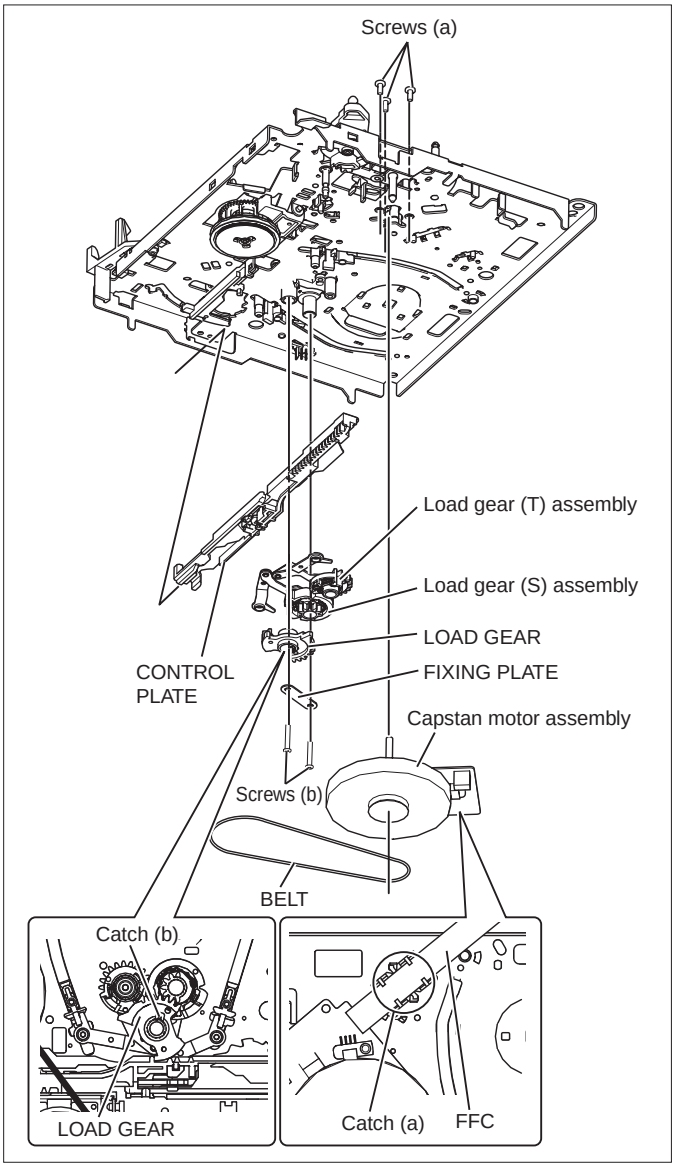


Fig. 2-2-7a

2.2.7.2 Installation (phase adjustment)

(1) Place the main deck on the guide hole (a) of the tension arm lever.
(2) Place the main deck on the guide hole (b) of the brake lever.
(3) Attach the control plate to align with the position guide (a).
(4) Place the hole (c) of the load arm (T) on the pole base (T) and the load gear (T) on the load gear base.
(5) Place the hole (d) of the load arm (S) on the pole base (S) and the load gear (S) on the load gear base. Be sure to align the guide mark (e) of the load gear (T) to that of the load gear (S).
(6) Turn the load gear (S/T) in the unloading direction to place the main deck on the guide hole (f) of the load gear (T).
(7) Place the main deck on the guide hole (g) of the control plate.
(8) Attach the load gear on the load gear base so that the control plate is placed on the edge (h) of the load gear.
(9) Place the fixing plate on the shaft of the load gear base and secure the screws (b).

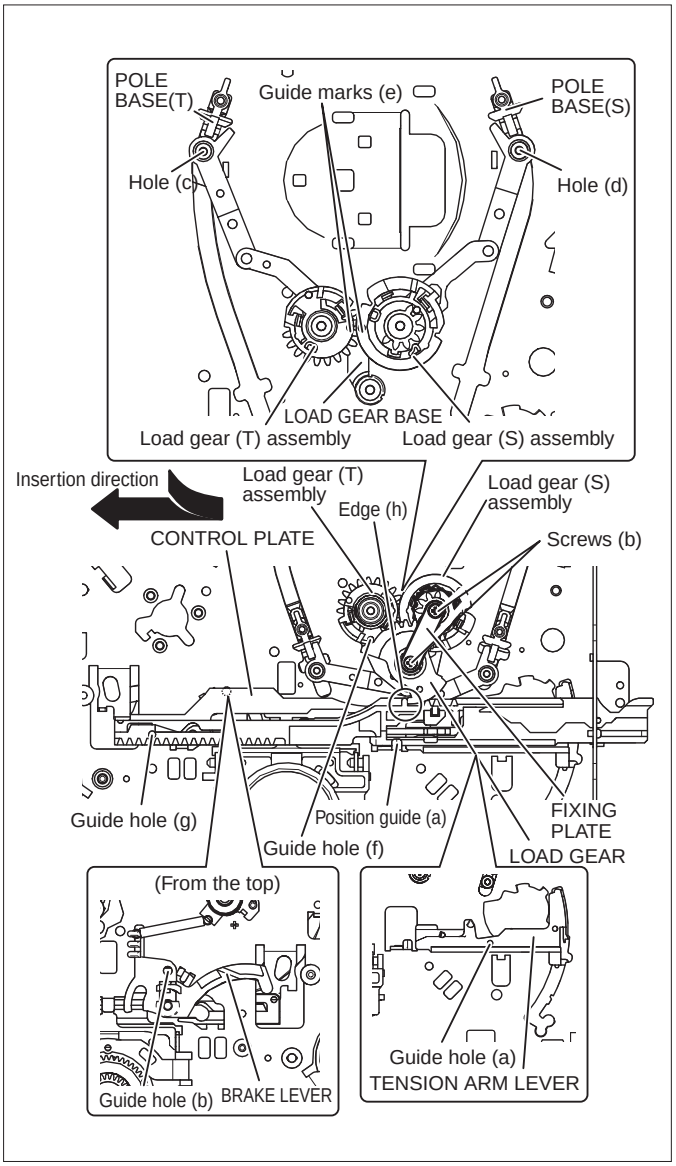


Fig. 2-2-7b

2.2.8 Clutch unit assembly, direct gear

2.2.8.1 Removal

(1) Remove the slit washer (a) to detach the clutch unit assembly.
(2) Remove the spring (a) and the direct gear.

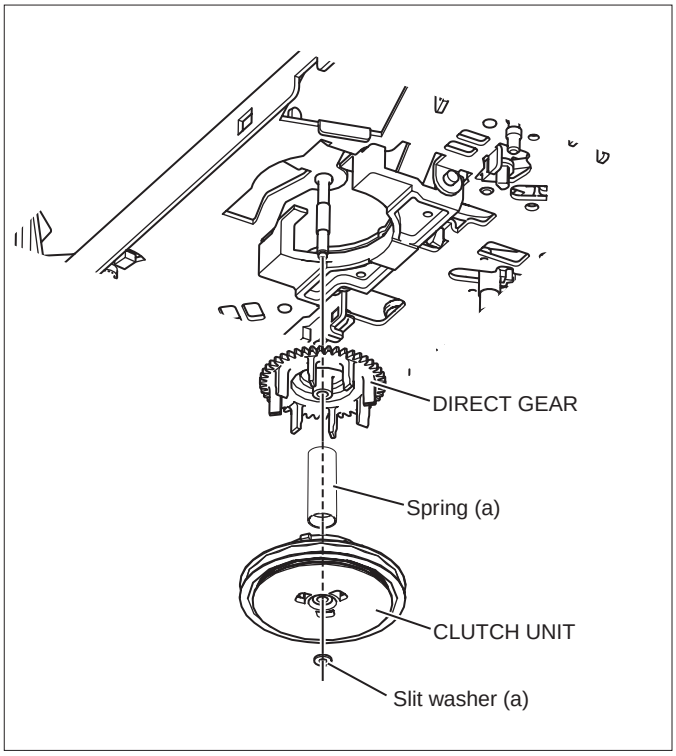
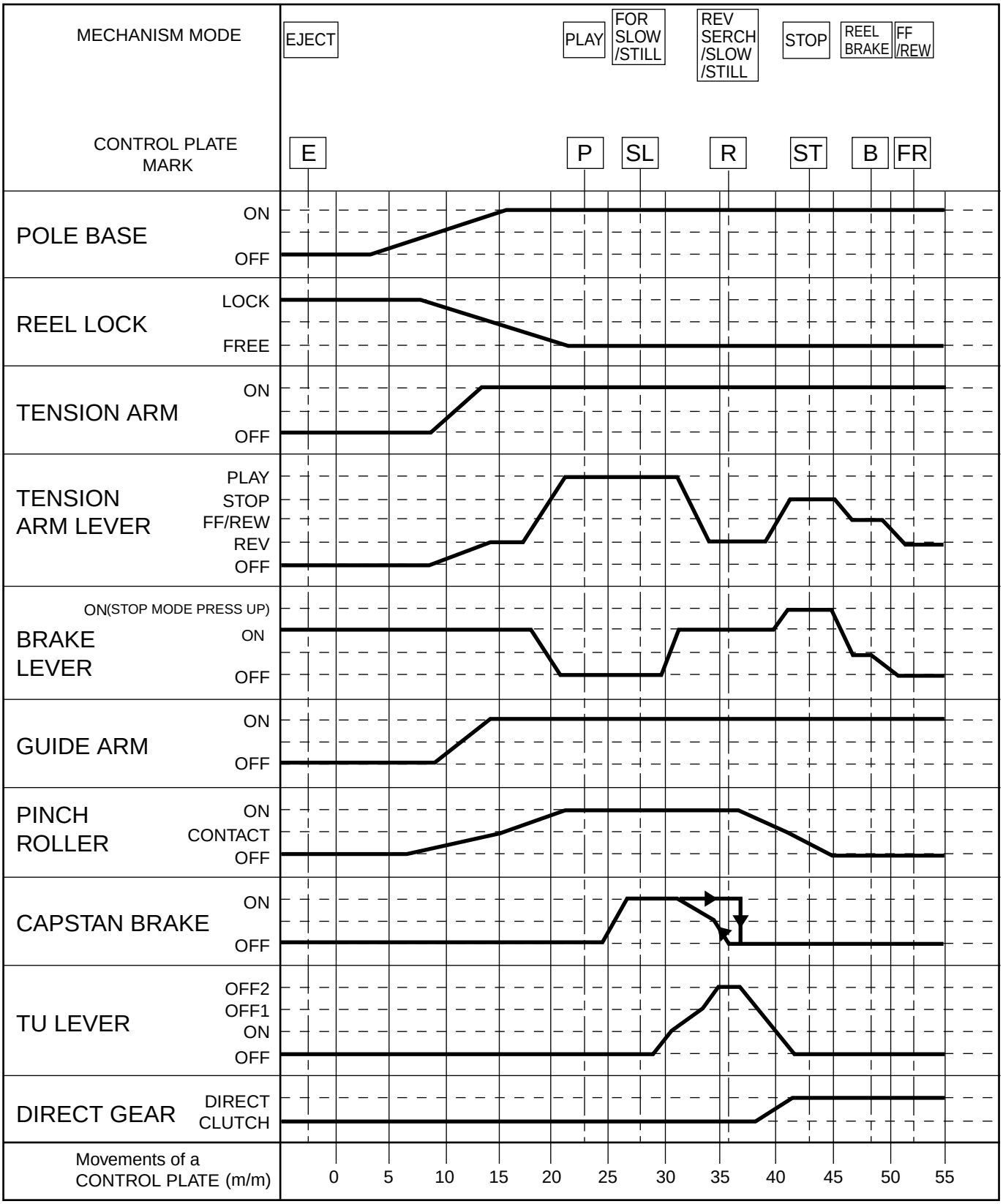


Fig. 2-2-8a

2.3 Mechanism timing chart



SECTION 3
ADJUSTMENT

3.1 Before adjustment

3.1.1 Precaution

- **The adjustments of this unit include the mechanism compatibility and electrical adjustments. During the performance of this work, be sure to observe the precautions for each type of adjustment.**
- **If there is a reference to a signal input method in the signal column of the adjustment chart, "Ext. S-input" means the Y/C separated video signal and "Ext. input" means the composite video signal input.**
- **Unless otherwise specified, all measuring points and adjustment parts are located on the Main board.**

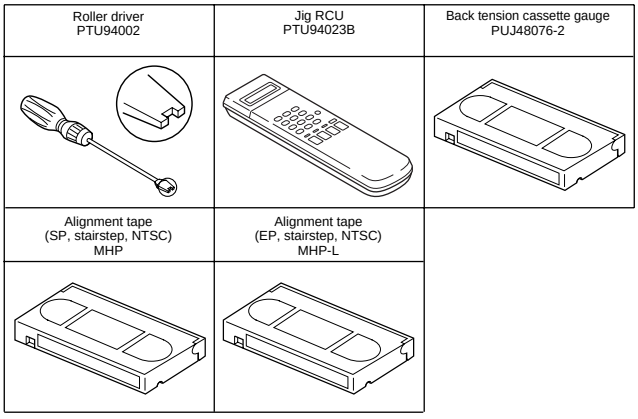
3.1.2 Required test equipments

- Color (colour) television or monitor
- Oscilloscope: wide-band, dual-trace, triggered delayed sweep
- Signal generator: RF / IF sweep / marker
- Signal generator: stairstep, color (colour) bar [NTSC]
- Recording tape
- Digit-key remote controller(provided)

3.1.3 Required adjustment tools

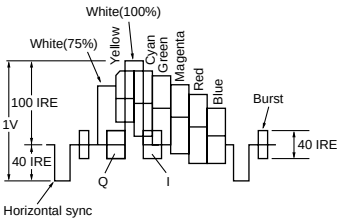
O : Used — : Not used

	Mechanism compatibility adjustment	Electrical adjustment
Roller driver	O	–
Jig RCU	–	O
Back tension cassette gauge	O	–
Alignment tape(MHP)	O	–
Alignment tape(MHP-L)	O	–

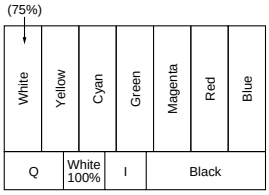


3.1.4 Color (colour) bar signal, color (colour) bar pattern

• Color(colour) bar signal [NTSC]



• Color(colour) bar pattern [NTSC]



3.1.5 Switch settings

When adjusting this unit, set the VCR mode and switches as described below.

- When using the Jig RCU, it is required to set the VCR to the Jig RCU mode (the mode in which codes from the Jig RCU can be received). (See "section 1 disassembly".)

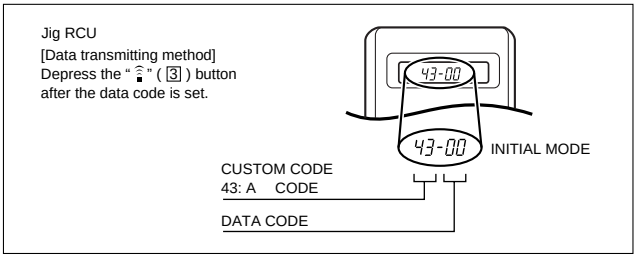


Fig. 3-1-5a Jig RCU [PTU94023B]

- Set the switches as shown below unless otherwise specified on the relevant adjustment chart. The switches that are not listed below can be set as desired.
  If the VCR is not equipped with the functions detailed below, setup is not required.

AUTO PICTURE/VIDEO CALIBRATION/ B.E.S.T./D.S.P.C.	OFF
PICTURE CONTROL/SMART PICTURE	NORMAL/NATURAL
VIDEO STABILIZER	OFF
TBC	ON
Digital 3R	ON
VIDEO NAVIGATION/TAPE MANAGER	OFF
BLUE BACK	OFF

3.1.6 Manual tracking mode (Auto tracking ON/OFF) setting

(1) In order to set to the manual tracking mode during tape playback, press the “SP/EP(LP)” button on the remote control unit.
  • Each press of the button switches the auto tracking ON or OFF.
  • When the auto tracking is OFF, the monitor screen displays “AT: OFF”.
  • When the manual tracking mode is set, the tracking is placed at the center position.
(2) Press “channel +/-” to adjust the tracking manually.

3.1.7 EVR adjustment

Some of the adjustments require the adjustment performed by the EVR system. The main unit have EEPROMs for storing the EVR adjustment data and user setups.

Notes:

- ***In the EVR adjustment mode, the value is varied with the channel buttons (+, –). The adjusted data is stored when the setting mode changes (from PB to STOP, when the tape speed is changed, etc.). Take care to identify the current mode of each adjustment item when making an adjustment.***
- ***When changing the address setting in the EVR adjustment mode, use the Jig RCU or the remote controller having numeric keypad with which a numeric code can be directly input.***
  The remote control code of the Jig RCU corresponds to each of the digit keys on the remote controller as follows.

Digit-key	0	1	2	3	4	5	6	7	8	9
Code	20	21	22	23	24	25	26	27	28	29

- ***As the counter indication and remaining tape indication are not displayed FDP during the EVR adjustment mode, check them on the TV monitor screen.***
- ***When performing the EVR adjustment, confirm that the FDP indication is changed to the EVR mode, as shown below.***

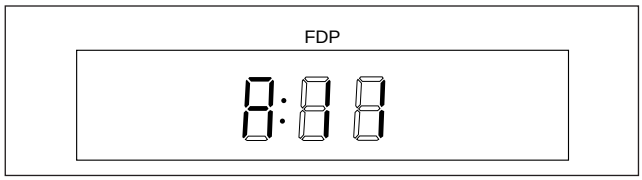


Fig. 3-1-7a EVR mode

3.2 Mechanism compatibility adjustment

Notes:

- ***Although compatibility adjustment is very important, it is not necessary to perform this as part of the normal servicing work. It will be required when you have replaced the A/C head, drum assembly or any part of the tape transport system.***
- ***To prevent damaging the alignment tape in the compatibility adjustment, prepare a cassette tape (for self-recording/playback), perform a test on it by transporting it and making sure that the tape is not bent by the tape transport mechanisms such as in the guide rollers.(See Fig.3-2-2a.)***

3.2.1 Tension pole position

Notes:

- ***This adjustment must be performed every time the tension band is replaced.***

Signal	(A)	• Back tension cassette gauge [PUJ48076-2]
Mode	(B1)	• PB
	(B2)	• Eject end
Adjustment part	(F)	• Adjust pin [Mechansim assembly]
Specified value	(G)	• 25 - 51 gf•cm ($2.45 – 5 \times 10^{-3}$ Nm)

(1) Play back the back tension cassette gauge (A).
(2) Check that the indicated value on the left side gauge is within the specified value (G).
(3) If the indicated value is not within the specified value (G), perform the adjustment in a following procedure.(See Fig.3-2-1a.)
  1) Remove the top frame, cassette holder and side frames (L/R) all together. (See “section 2 mechanism”.)
  2) Rotate the loading motor gear to move the control plate so that the triangular stamping to the left of the “P” stamping is aligned with the stamping (a) on the main deck. This positioning is mode (B1).
  3) Adjust by turning the adjustment pin so that the tip of the tension arm is aligned with the stamping (b) on the main deck.
  4) Rotate the reel disk (S) by about one turn clockwise and make sure that the round hole of the adjustment pin is located in the “OK” range.
    If it is outside this range, restart the adjustment from the beginning.
  After completion of the adjustment, rotate the loading gear motor to return it to the mode (B2) position.

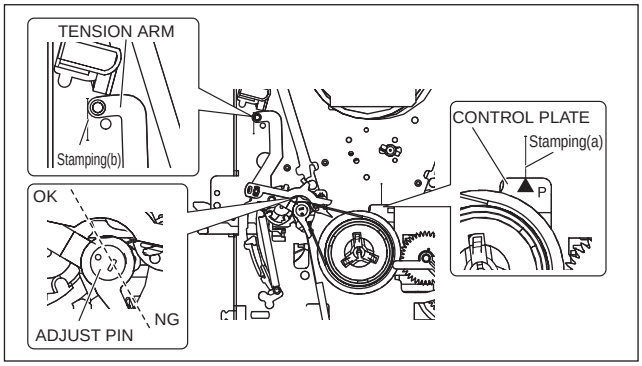


Fig. 3-2-1a

3.2.2 FM waveform linearity

Signal	(A1) (A2)	• Alignment tape(SP, stairstep, NTSC) [MHP] • Alignment tape(EP, stairstep, NTSC) [MHP-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Guide roller [Mechanism assembly]
Specified value	(G)	• Flat V.PB FM waveform
Adjustment tool	(H)	• Roller driver [PTU94002]

(1) Play back the alignment tape (A1).
(2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
(3) Set the VCR to the manual tracking mode.
(4) Make sure that there is no significant level drop of the V.PB FM waveform caused by the tracking operation, with its generally parallel and linear variation ensured. Perform the following adjustments when required. (See Fig. 3-2-2b.)
(5) Reduce the V.PB FM waveform by the tracking operation. If a drop in level is found on the left side, turn the guide roller of the pole base assembly (supply side) with the roller driver to make the V.PB FM waveform linear.
If a drop in level is on the right side, likewise turn the guide roller of the pole base assembly (take-up side) with the roller driver to make it linear. (See Fig. 3-2-2b.)
(6) Make sure that the V.PB FM waveform varies in parallel and linearly with the tracking operation again. When required, perform fine-adjustment of the guide roller of the pole base assembly (supply or take-up side).
(7) Unload the cassette tape once, play back the alignment tape (A1) again and confirm the V.PB FM waveform.
(8) After adjustment, confirm that the tape wrinkling does not occur at the roller upper or lower limits. (See Fig. 3-2-2a.)

[Perform adjustment step (9) only for the models equipped with SP mode and EP (or LP) mode.]

(9) Repeat steps (1) to (8) by using the alignment tape (A2).

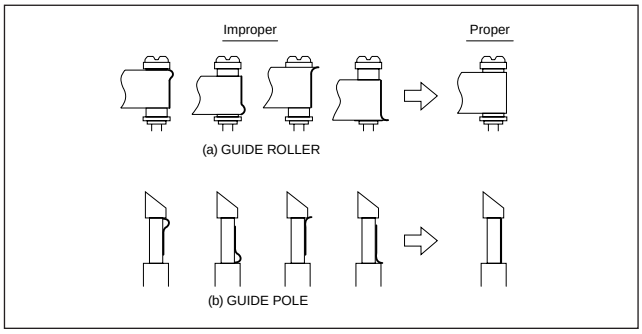


Fig. 3-2-2a

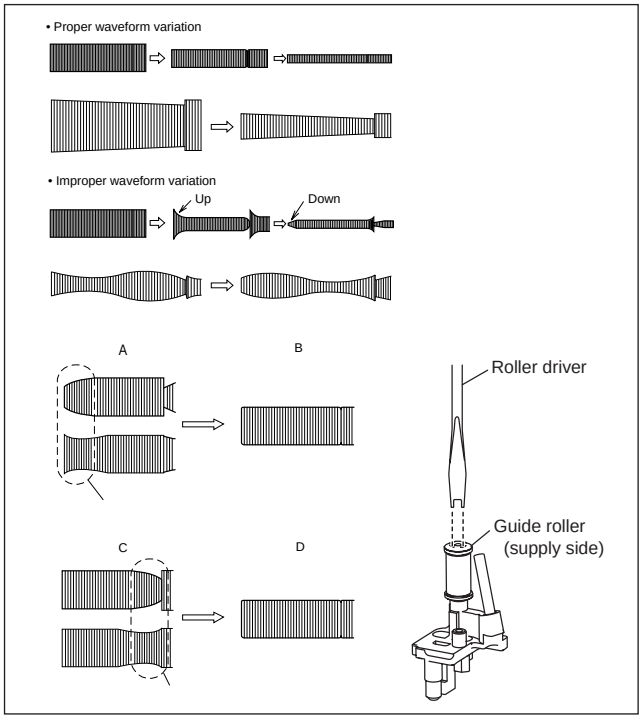


Fig. 3-2-2b

3.2.3 Height and tilt of the A/C head

Note:

• Set a temporary level of the height of the A/C head in advance to make the adjustment easier after the A/C head has been replaced. (See "section 2 mechanism".)

Signal	(A)	• Alignment tape(SP, stairstep, NTSC) [MHP]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• AUDIO OUT terminal • TP4001 (CTL. P)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• A/C head [Mechanism assembly]
Specified value	(G)	• Maximum waveform

(1) Play back the alignment tape (A).
(2) Apply the external trigger signal to D.FF (E), to observe the AUDIO OUT waveform and Control pulse waveform at the measuring points (D1) and (D2) in the ALT mode.
(3) Set the VCR to the manual tracking mode.
(4) Adjust the AUDIO OUT waveform and Control pulse waveform by turning the screws (1), (2) and (3) little by little until both waveforms reach maximum. The screw (1) and (3) are for adjustment of tilt and the screw (2) for azimuth.

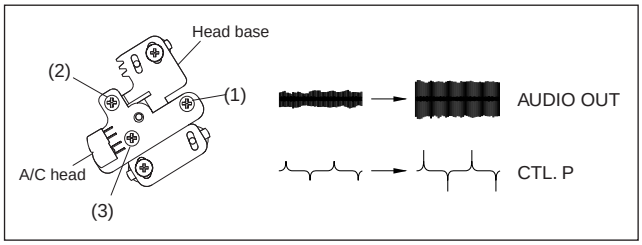


Fig. 3-2-3a

3.2.4 A/C head phase (X-value)

Signal	(A1) (A2)	• Alignment tape(SP, stairstep, NTSC) [MHP] • Alignment tape(EP, stairstep, NTSC) [MHP-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• A/C head base [Mechanism assembly]
Specified value	(G)	• Maximum V.PB FM waveform
Adjustment tool	(H)	• Roller driver [PTU94002]

(1) Play back the alignment tape (A1).
(2) Apply the external trigger signal to D.FF (E), to observe the V.PB FM waveform at the measuring point (D).
(3) Set the VCR to the manual tracking mode.
(4) Loosen the screws (4) and (5), then set the Roller driver to the innermost projected part of the A/C head. (See Fig. 3-2-4a.)
(5) Rotate the roller driver so that the A/C head comes closest to the capstan. From there, move the A/C head back gradually toward the drum until the point where the FM waveform is maximized for the second time, and then tighten the screws (4) and (5) temporarily.
(6) Play an alignment tape (A2) and set to the manual-tracking mode.
(7) Fine-adjust A/C head base position to maximize the FM waveform, and then tighten the screws (4) and (5) firmly.
(8) Play alignment tapes (A1) and (A2) and confirm that the FM waveforms are maximized when the tracking is at the center position.

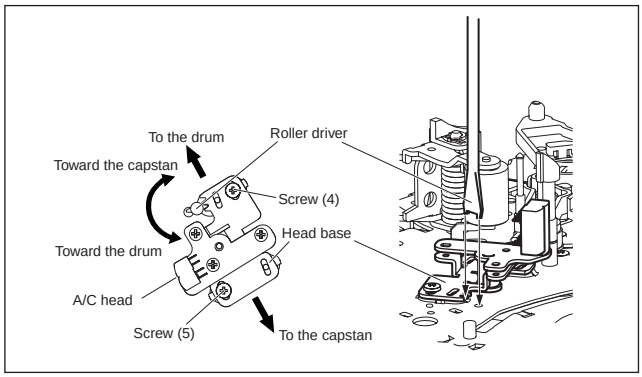


Fig. 3-2-4a

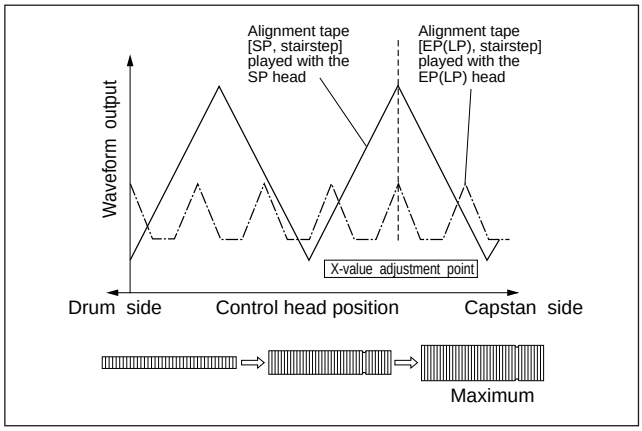


Fig. 3-2-4b

3.3 Electrical adjustment

Note:
The following adjustment procedures are not only necessary after replacement of consumable mechanical parts or board assemblies, but are also provided as references to be referred to when servicing the electrical circuitry.
In case of trouble with the electrical circuitry, always begin a service by identifying the defective points by using the measuring instruments as described in the following electrical adjustment procedures. After this, proceed to the repair, replacement and/or adjustment. If the required measuring instruments are not available in the field, do not change the adjustment parts (variable resistor, etc.) carelessly.

3.3.1 Servo circuit

3.3.1.1 Switching point

Signal	(A1) (A2)	• Stairstep signal • Alignment tape (EP,stairstep,NTSC) [MHP-L]
Mode	(B)	• PB
Equipment	(C)	• Oscilloscope
Measuring point	(D1) (D2)	• VIDEO OUT terminal (75Ω terminated) • TP106 (PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• Jig RCU: Code “5A”
Specified value	(G)	• 7.5 ± 0.5H
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Play back the signal (A1) of the alignment tape (A2).
(2) Apply the external trigger signal to D.FF (E) to observe the VIDEO OUT waveform and V.PB FM waveform at the measuring points (D1) and (D2).
(3) Set the VCR to the manual tracking mode.
(4) Adjust tracking so that the V.PB FM waveform becomes maximum.
(5) Set the VCR to the Auto adjust mode by transmitting the code (F) from the Jig RCU. When the VCR enters the stop mode, the adjustment is completed.
(6) If the VCR enters the eject mode, repeat steps (1) to (5) again.
(7) Play back the alignment tape (A2) again, confirm that the switching point is the specified value (G).

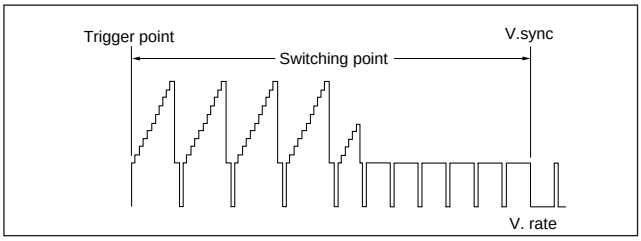


Fig. 3-3-1-1a Switching point

3.3.1.2 Slow tracking preset

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [NTSC]
Mode	(B1) (B2)	• S-VHS SP • S-VHS EP
Measuring point	(D)	• TV-Monitor
Adjustment part	(F)	• Jig RCU: Code “71“ or “72”
Specified value	(G)	• minimum noise
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Record the signal (A2) in the mode (B1), and play back the recorded signal.
(2) Set the VCR to the manual tracking mode.
(3) Set the VCR to the FWD slow (+1/6x) mode.
(4) Transmit the code (F) from the Jig RCU to adjust so that the noise bar becomes the specified value (G) on the TV monitor in the slow mode.
(5) Set the VCR to the Stop mode.
(6) Confirm that the noise bar is (G) on the TV monitor in the slow mode.
(7) Repeat steps (3) to (6) in the REV slow (–1/6x) mode.
(8) Repeat steps (1) to (7) in the mode (B2).

Note:

- **For FWD slow (+1/6x) playback, transmit the code "08" from the Jig RCU to enter the slow playback mode, and transmit the code "D0" for REV slow (–1/6x) mode.**

3.3.2 Video circuit

3.3.2.1 EE Y/PB Y (S-VHS/VHS) level

Signal	(A1) (A2)	• Ext. input • Color (colour) bar signal [NTSC]
Mode	(B1) (B2) (B3)	• EE • S-VHS SP • VHS SP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• Y OUT terminal (75Ω terminated)
EVR mode EVR address	(F1) (F2) (F3) (F4)	• Jig code "57" • A : 11 • Jig code "21" twice • Jig code "18" or "19" (Channel +/-)
Specified value	(G)	• 1.00 ± 0.05 Vp-p
Adjustment tool	(H)	• Jig RCU [PTU94023B]

(1) Set the VCR to the mode (B1)
(2) Observe the Y OUT waveform at the measuring point (D).
(3) Set the VCR to the EVR mode by transmitting the code (F1) from the Jig RCU.
(4) Set the EVR address to (F2) by transmitting the code (F3) from the Jig RCU.
(5) Transmit the code (F4) from the Jig RCU to adjust so that the Y level of the Y OUT waveform becomes the specified value (G).
(6) Release the EVR mode of the VCR by transmitting the code (F1) from the Jig RCU again. (When the EVR mode is released, the adjusted data is memorized.)
(7) Record the signal (A2) in the mode (B2), and play back the recorded signal.
(8) Set the VCR to the manual tracking mode.
(9) Repeat steps (1) to (5) in the mode (B2).
(10) Record the signal (A2) in the mode (B3), and play back the recorded signal.
(11) Set the VCR to the manual tracking mode.
(12) Repeat steps (1) to (5) in the mode (B3).

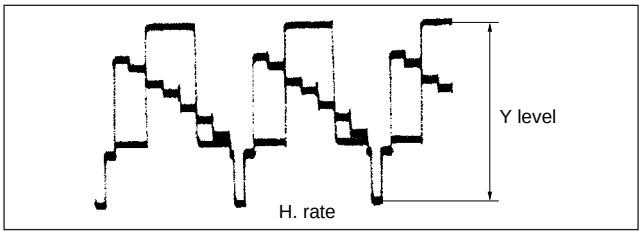


Fig. 3-3-2-1a EE/PB Y level

3.3.3 Audio circuit

Notes:

- ***GND (Ground) should be taken from the Tuner shield case.***

3.3.3.1 Audio REC FM

Signal	(A1) (A2) (A3)	• Ext. input • Audio: No signal • Video: Color (colour) bar signal [NTSC]
Mode	(B)	• S-VHS EP
Equipment	(C)	• Oscilloscope
Measuring point	(D)	• TP2253 (A. PB. FM)
External trigger	(E)	• TP111 (D.FF)
Adjustment part	(F)	• VR2251
Specified value	(G1) (G2)	• 350 ± 50 mVp-p • More than 200 mVp-p

(1) Apply the external trigger signal to D.FF (E) to observe the Audio PB FM waveform at the measuring point (D).
(2) Record the signal (A3) with no audio signal input in the mode (B), and play back the recorded signal.
(3) Set the VCR to the manual tracking mode.
(4) If the A.PB FM level is not within the specified value (G1), perform the adjustment in a following procedure.
(5) Adjust the adjustment part(F) to become waveform level of specified value(G1) in a channel with higher A. PB FM waveform. (Adjust before recording, then confirm it by playing back.)
(6) If specified value(G1) is not obtained in step(5), adjust the adjustment part(F) to become waveform level of specified value(G2) in channel with lower A. PB FM waveform.(Adjust before recording, then confirm it by playing back.)

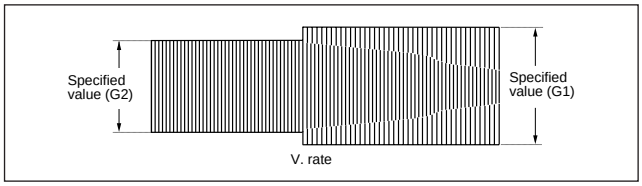


Fig. 3-3-3-1a Audio REC FM

JVC SERVICE & ENGINEERING COMPANY OF AMERICA
DIVISION OF JVC AMERICAS CORP.

Head office	:	1700 Valley Road Wayne, New Jersey 07470-9976	(973)317-5000
East Coast	:	10 New Maple Avenue Pine Brook, New Jersey 07058-9641	(973)396-1000
Midwest	:	705 Enterprise Street Aurora, Illinois 60504-8149	(630)851-7855
West Coast	:	5665 Corporate Avenue Cypress, California 90630-0024	(714)229-8011
Atlanta	:	1500 Lakes Parkway Lawrenceville, Georgia 30043-5857	(770)339-2582
Hawaii	:	2969 Mapunapuna Place Honolulu, Hawaii 96819-2040	(808)833-5828

JVC CANADA INC.

Head office	:	21 Finchdene Square Scarborough, Ontario M1X 1A7	(416)293-1311
Montreal	:	16800 Rte Trans-Canadienne, Kirkland, Quebec H9H 5G7	(514)871-1311
Vancouver	:	13040 Worster Court Richmond, B.C. V6V 2B3	(604)270-1311

JVC

S40895-04

Printed in Japan

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

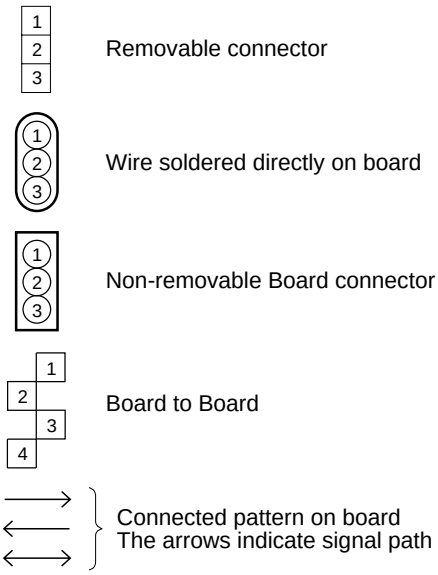
1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K or k: kΩ (1000Ω), M: MΩ (1000kΩ)
2) All capacitance values are in µF, (P: PF).
3) All inductance values are in µH, (m: mH).
4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

2. Indications of control voltage

AUX : Active at high

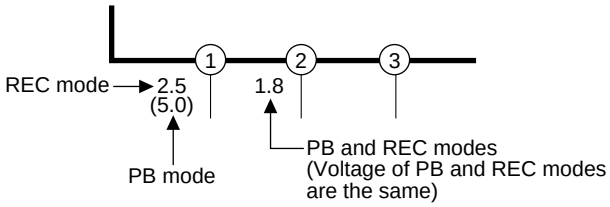
$\overline{\text{AUX}}$ or AUX(L) : Active at low

3. Interpreting Connector indications



4. Voltage measurement

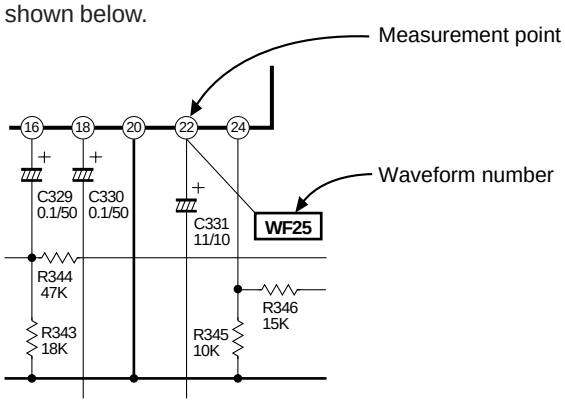
1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
   — : Unmeasurable or unnecessary to measure
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode
4) Indication on schematic diagram
   Voltage Indications for REC and PB mode on the schematic diagram are as shown below.



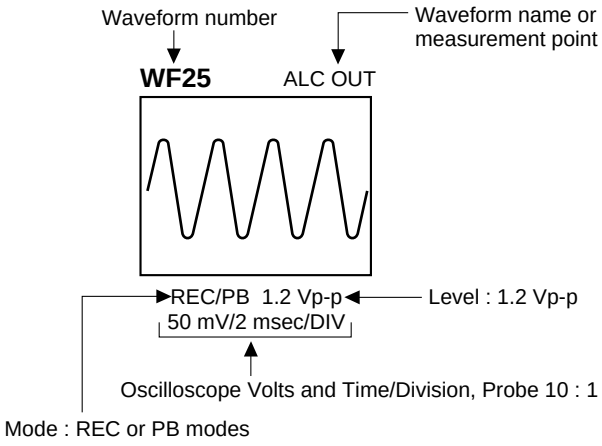
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test chatrs in the E-E mode
4) Indication on schematic diagram
   Waveform indications on the schematic diagram are as shown below.



5) Waveform indications



6. Signal path Symbols

The arrows indicate the signal path as follows.

Playback signal path

Playback and recording signal path

Recording signal path
(including E-E signal path)

Capstan servo path

Drum servo path

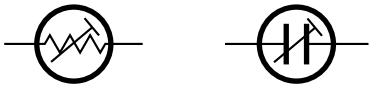
(Example)

R-Y Playback R-Y signal path

Y Recording Y signal path

7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.

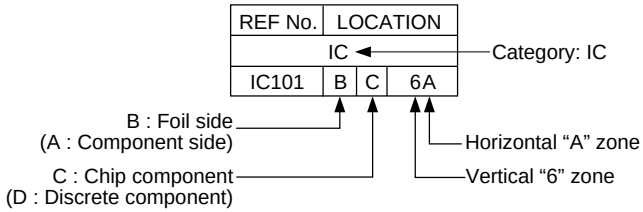
CIRCUIT BOARD NOTES

1. Foil and Component sides

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

Parts location are indicated by guide scale on the circuit board.

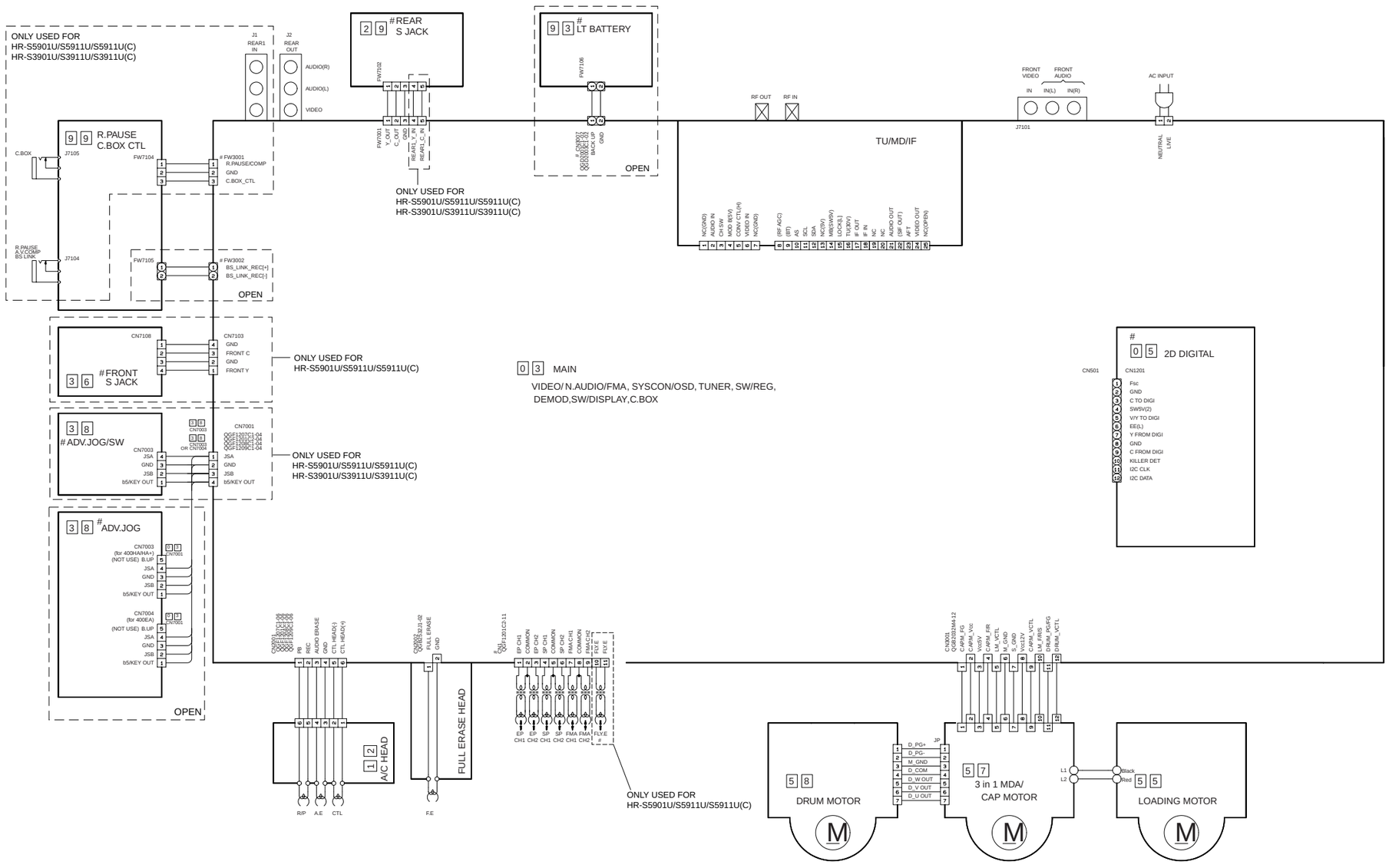


Note:

For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

4.1 BOARD INTERCONNECTIONS

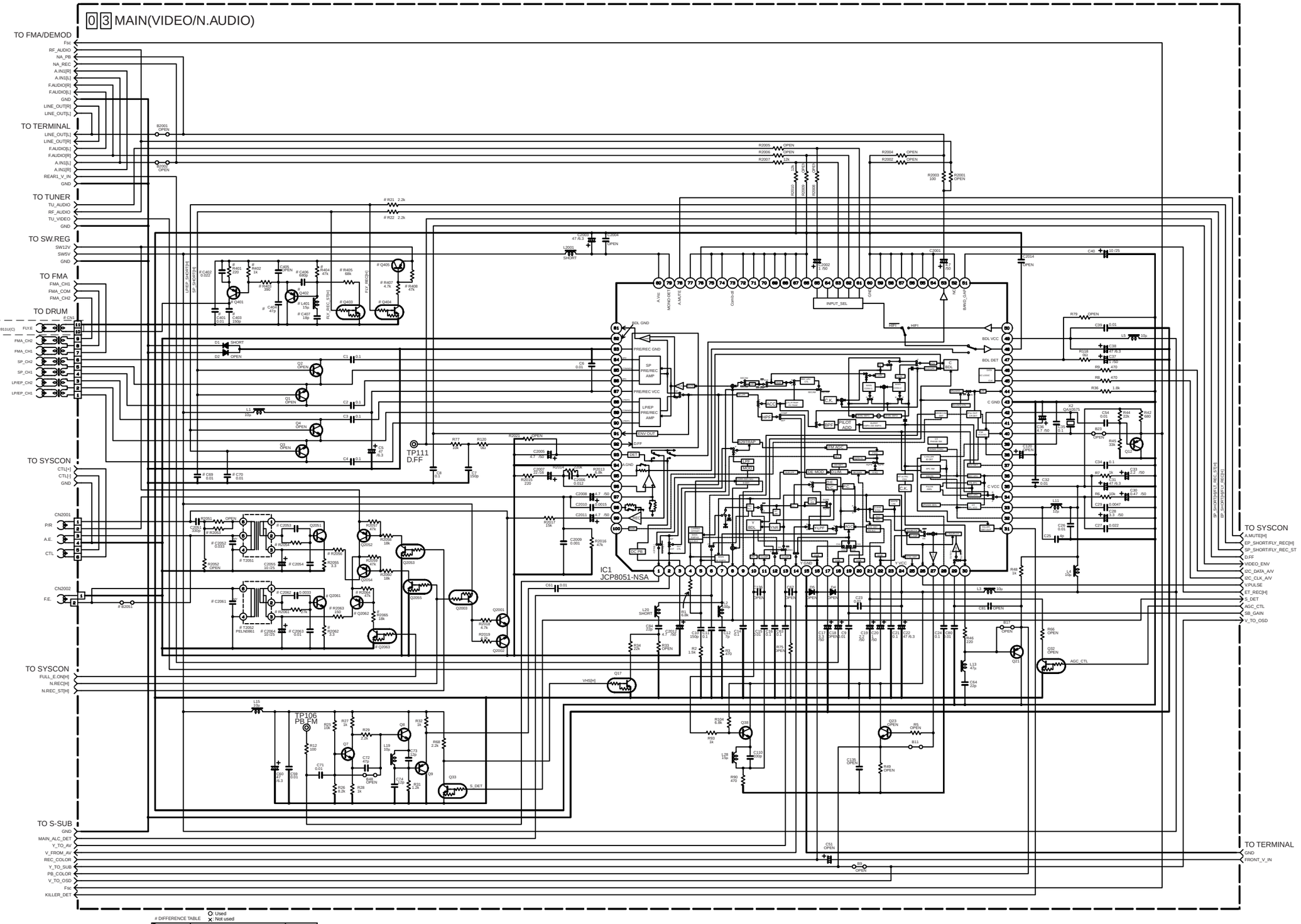
Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



NO	NAME
99	R.PAUSE/C.BOX CTL
93	LT BATTERY
58	DRUM MOTOR
57	3in1 MDA/CAP MOTOR
55	LOADING MOTOR
38	ADV.JOG/SW
36	FRONT S JACK
29	REAR S JACK
12	A/C HEAD
05	2D DIGTAL
03	MAIN

4.2 MAIN (VIDEO/N.AUDIO) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



DIFFERENCE TABLE O: Used X: Not used

SYMBOL / MODEL		Q401-Q405 R401-R409	C401-C409 L401,L402	R21,R22 C69,C70	CN1
FLYING ERASE	YES	O			1-11 PIN
	NO	X			1-9 PIN

SYMBOL / MODEL	T2052 Q2061 Q2062 Q2063 Q2001 R2061 R2063 R2064 C2052 C2062 C2063 C2064	B2051	T2051	R2053	R2054	R2056	C2053	C2054	C2061
with A.DUB	O	X	PELN0860	4.7k	15k	100	0.0033	0.01	0.033
w/o A.DUB	X	O	PELN0832	5.6k	12k	82	0.0047	0.022	0.082

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MYLER

ALL NPN TYPE TRANSISTORS ARE 2SC4081/QRS/.
ALL PNP TYPE TRANSISTORS ARE 2SA1576A/QR/.
ALL NPN TYPE D.TRANSISTORS ARE DTC144WUA.
ALL PNP TYPE D.TRANSISTORS ARE DTA144WUA.

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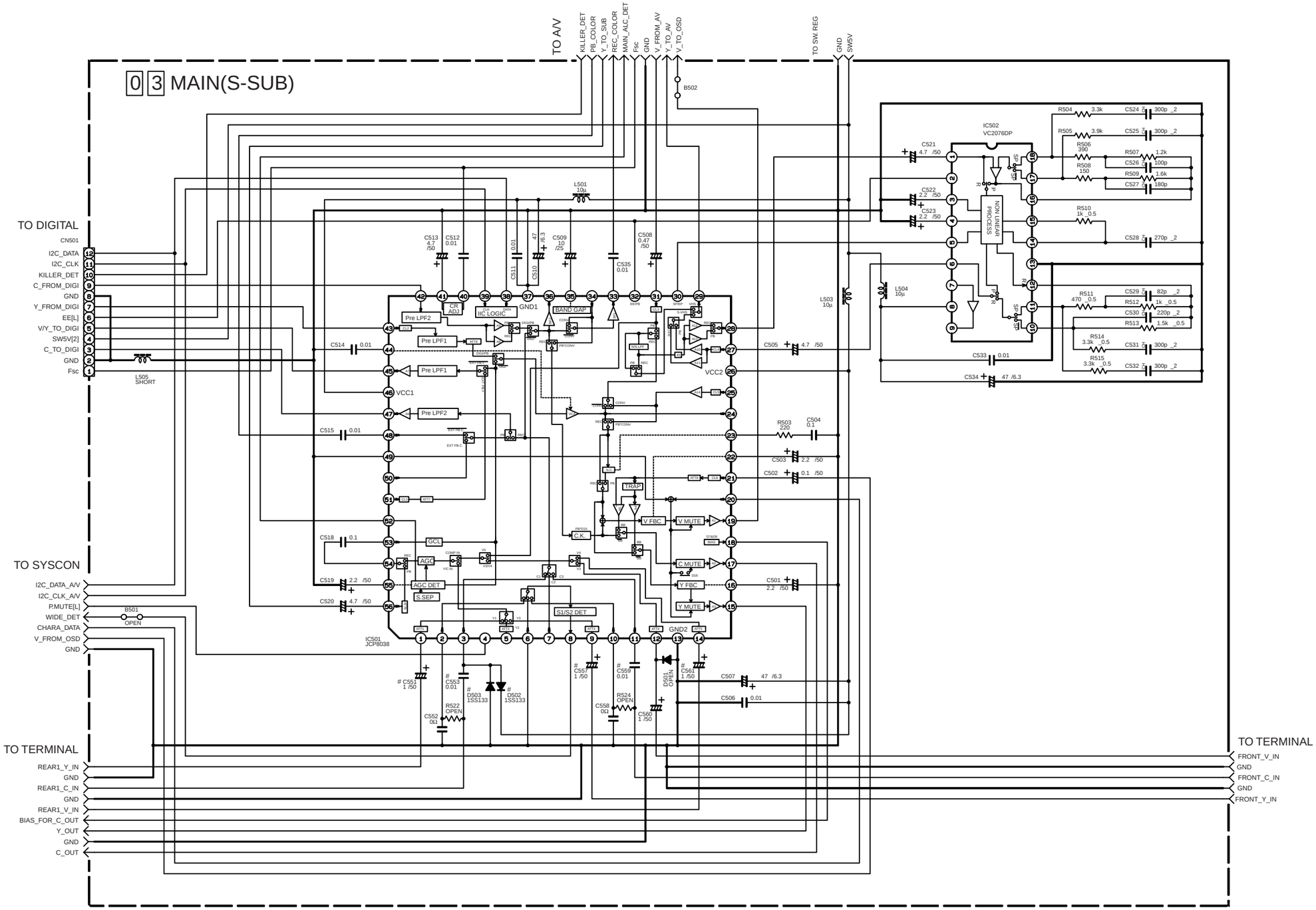
4.3 MAIN (S-SUB) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



○: Used
×: Not used

DIFFERENCE TABLE

MODEL \ SYMBOL	REAR1_V-IN	REAR1_S-IN	FRONT_S-IN
	C561	C551 C553 D502 D503	C557 C559
HR-S5901U/S5911U/S5911U(C)	○	○	○
HR-S3901U/S3911U/S3911U(C)	○	○	×
HR-S2901U/S2911U(C)/S8009UM	×	×	×

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN µF.
ALL NPN TYPE TRANSISTORS ARE 2SC4081/QRS/
ALL PNP TYPE TRANSISTORS ARE 2SA1576A/QR/

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

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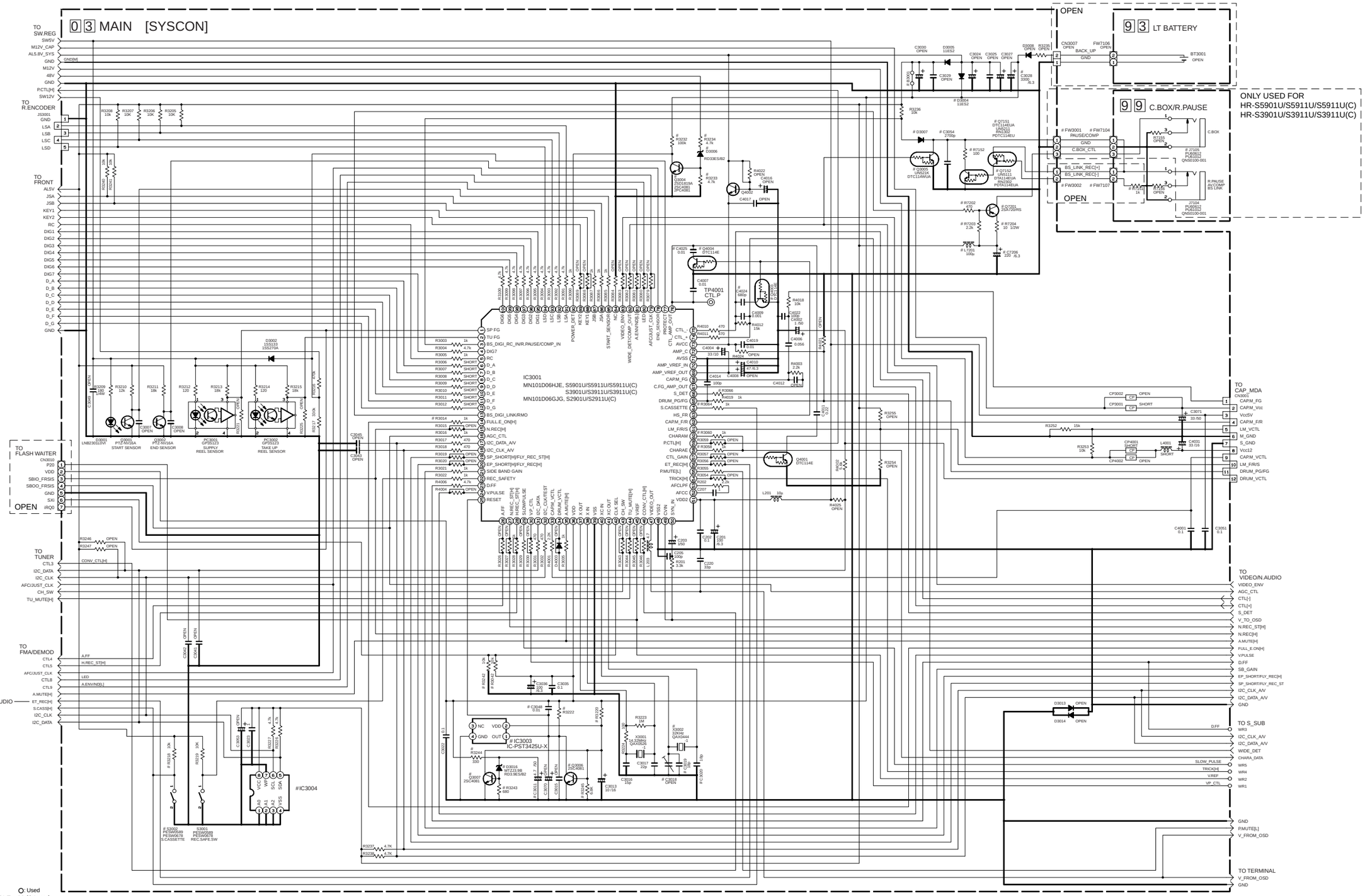
4.4 MAIN (SYSCON) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



DIFFERENCE TABLE

○: Used
×: Not used

	POWER_DET	BACK_UP5V		BS_LINK/R.PAUSE/C.BOX			XTAL	EEPROM	RESET					CLK_SEL		SERVO
	Q3004 Q3006 R3232 R3234 R3233	D3004 C3028	B3001	D3007	Q3005 FW3001 FW7104 J7105 R7155 R7156 L7201 Q7201 R7204 C7206	Q3054 Q7152 Q7151 FW3002 FW7107 R7151	X3002 C3018 C3020	IC3004	IC3003 C3013 C3048	R3244 Q3007 R3243 D3016 C3011 R3245	R3220	R3222	R3014 R3058 R3060 R3064 R3066	R3042	R3242	C4024 C4025 Q4003 Q4004
HR-B12 HR-G12 HR-GC32-U HR-GC32-A HR-G22 HR-G72	○	○	×	SHORT	×	○	○	16k	○	×	6.8k	4.7k	×	○	×	×
HR-S5901U/S5911U/ S5911U(C)	×	×	○	1SS133 1SS270A	○	×	×	4k	×	○	5.6k	470	○	×	○	×

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

LAST NO.	VACANT NO
R	
C	
D	
Q	
L	

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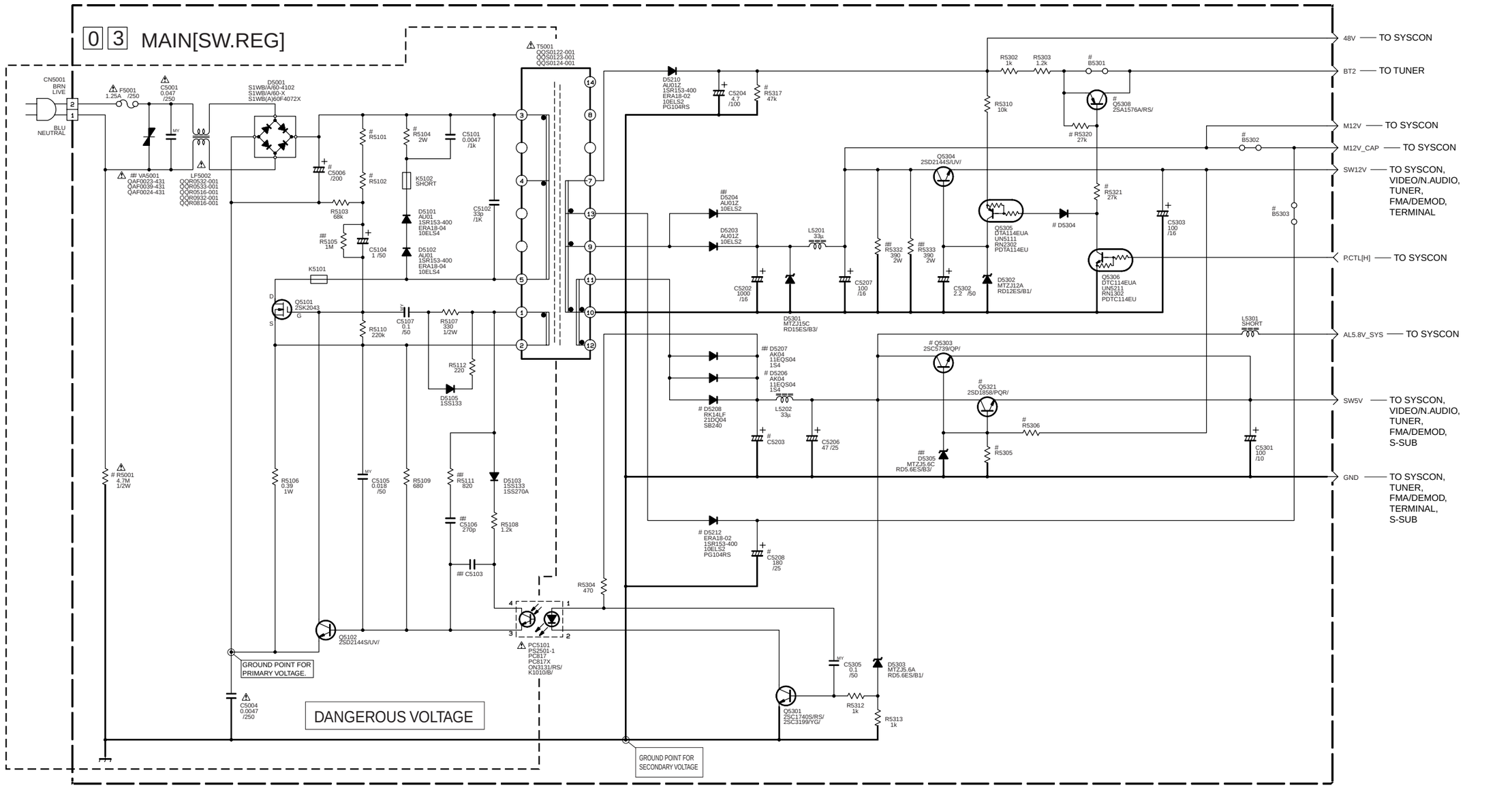
4.5 MAIN (SW.REG) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



##MARK ELEMENTS ARE NOT MOUNTED.

#DIFFERENCE TABLE 1

		C5006	C5203	D5206	D5208	Q5303	Q5321	R5001	R5305	R5306
HiFi	DOM	82	680 /10	YES	NO	NO	YES	NO	620	390
S-VHS	US	150	1200 /10	NO	YES	YES	NO	YES	240	180

#DIFFERENCE TABLE 2

POWER SAVE	B5301	D5304	Q5308	R5101	R5102	R5104	R5317	R5320	R5321
YES	NO	YES	YES	330k	330k	150k	YES	YES	YES
NO	YES	SHORT	NO	220k	220k	68k	NO	NO	NO

#DIFFERENCE TABLE 3

HIGH SPEED FF/REW	B5302	B5303	C5208	D5212
YES	YES	NO	NO	NO
NO	NO	YES	YES	YES

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN µF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

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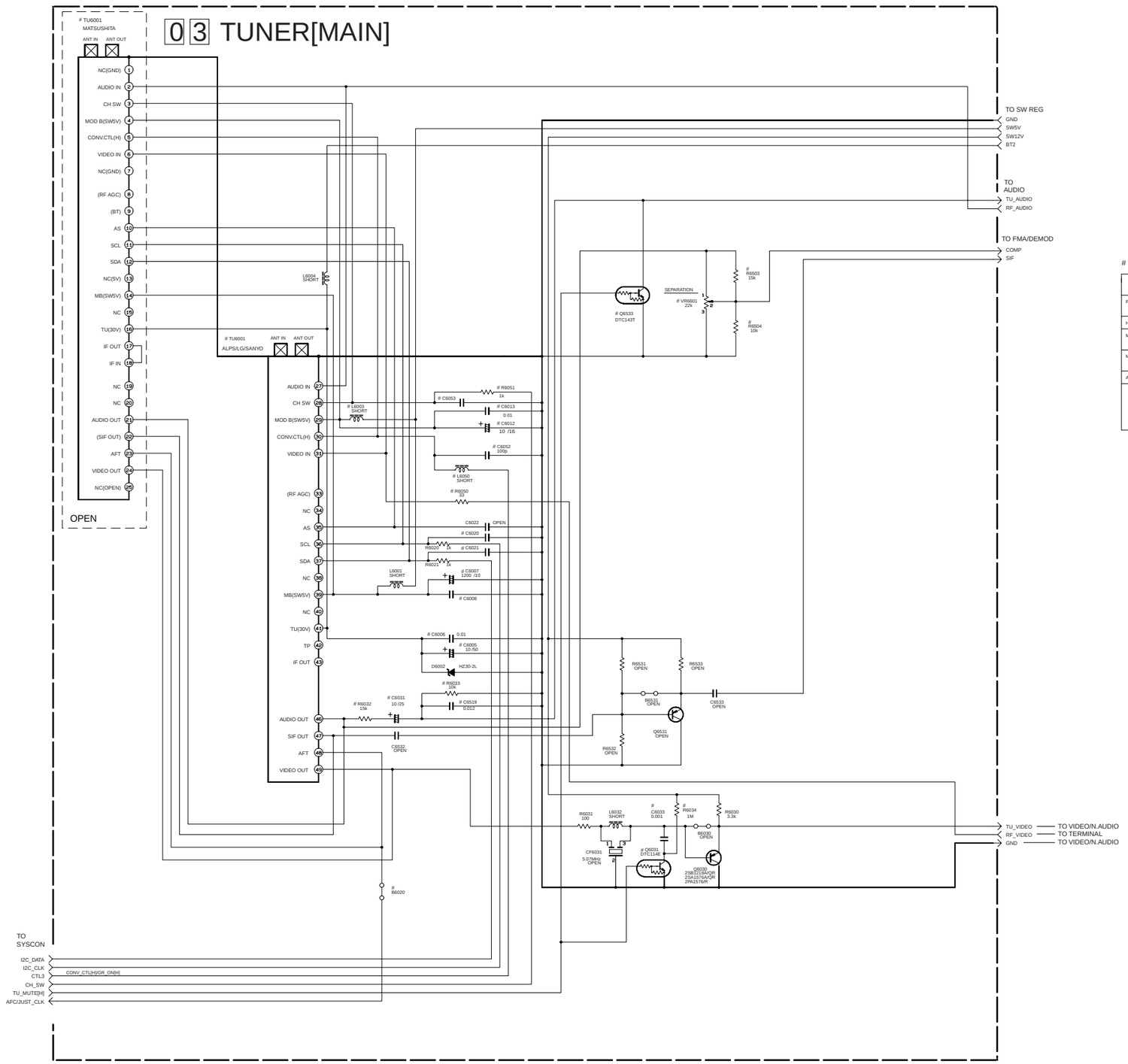
4.6 MAIN (TUNER) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



DIFFERENCE TABLE

○: Used
×: Not used

		JPN	US HiFi	US MONO
RF CONV.	L6003,L6050, R6050,R6051	×	○	○
HiFi	R6503,R6504	○	○	×
MONO	R6032,R6033, C6031, C6519	×	×	○
MUTE	Q6031,Q6033, R6034,C6033	×	×	×
AFC	B6020	×	○	○
	C6005-C6008, C6012,C6013, C6020-C6022, C6052,C6053, VR6601	×	×	×

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

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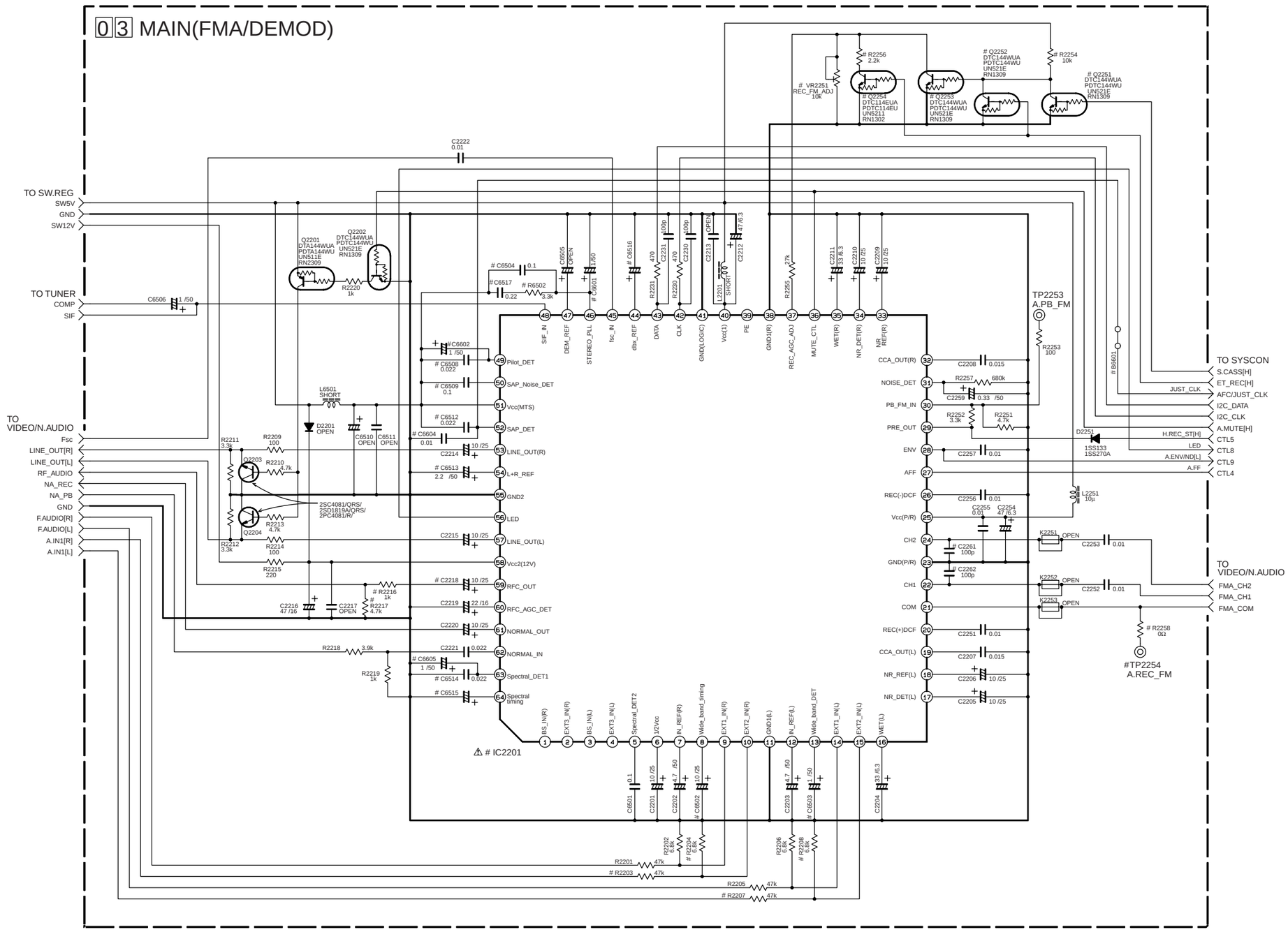
4.7 MAIN (FMA/DEMOD) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



DIFFERENCE TABLE

○: Used
×: Not used

SYMBOL / REAR INPUT	R2203 R2204 R2207 R2208
YES	○
NO	×

SYMBOL / RF OUTPUT	R2216 R2217 C2218
YES	○
NO	×

SYMBOL / S-VHS	Q2251-Q2254 R2254,R2256 R2258,TP2254	VR2251
YES	○	○
NO	×	SHORT

SYMBOL / FLY ERASE	C2261 C2262
YES	○
NO	×

SYMBOL	IC2201	R6502 C6502-C6504 C6508,C6509 C6512-C6514 C6517	C6515	C6516	B6601 C6601 C6602 C6604 C6605
DOM	AN3672NFBP	×	1/50	10/25	○
OTHERS	AN3663FBP	○	3.3/50	4.7/25	×

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

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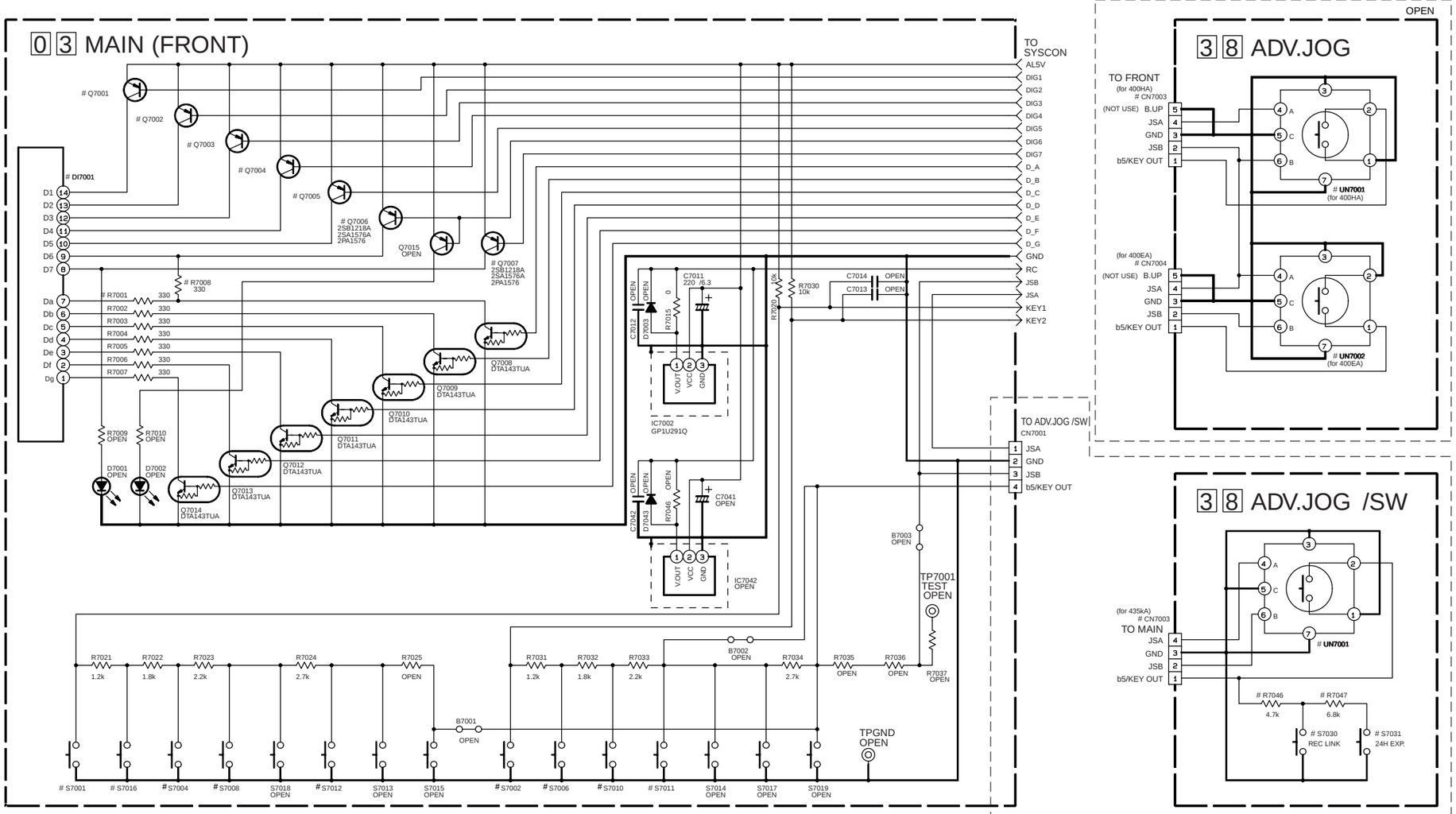
4.8 MAIN (FRONT) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



ONLY USED FOR HR-S5901U/S5911U/S5911U(C)/S3910U/S3911U/S3911U(C)

KEY LEYOUT ○: Used ×: Not used

CHASSIS WIDTH	S7001	S7002	S7016	S7004	S7006	S7008	S7010	S7011	S7013	S7012	DI7001	Q7001 - Q7005	Q7006 Q7007	R7001	R7008
435	X	POWER	X	INSERT	A.DUB	REC	PAUSE	PLAY	STOP/ EJECT	X	LTG-Y2K12M-01J	DTA143TUA	X	X	○
400	POWER	STOP/ EJECT	REVIW	BS DIGITAL	REC	PAUSE	PLAY	X	X	24H EXP.	LTG-0126M-01J	2SB1218A 2SA1576A 2PA1576	○	○	X

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

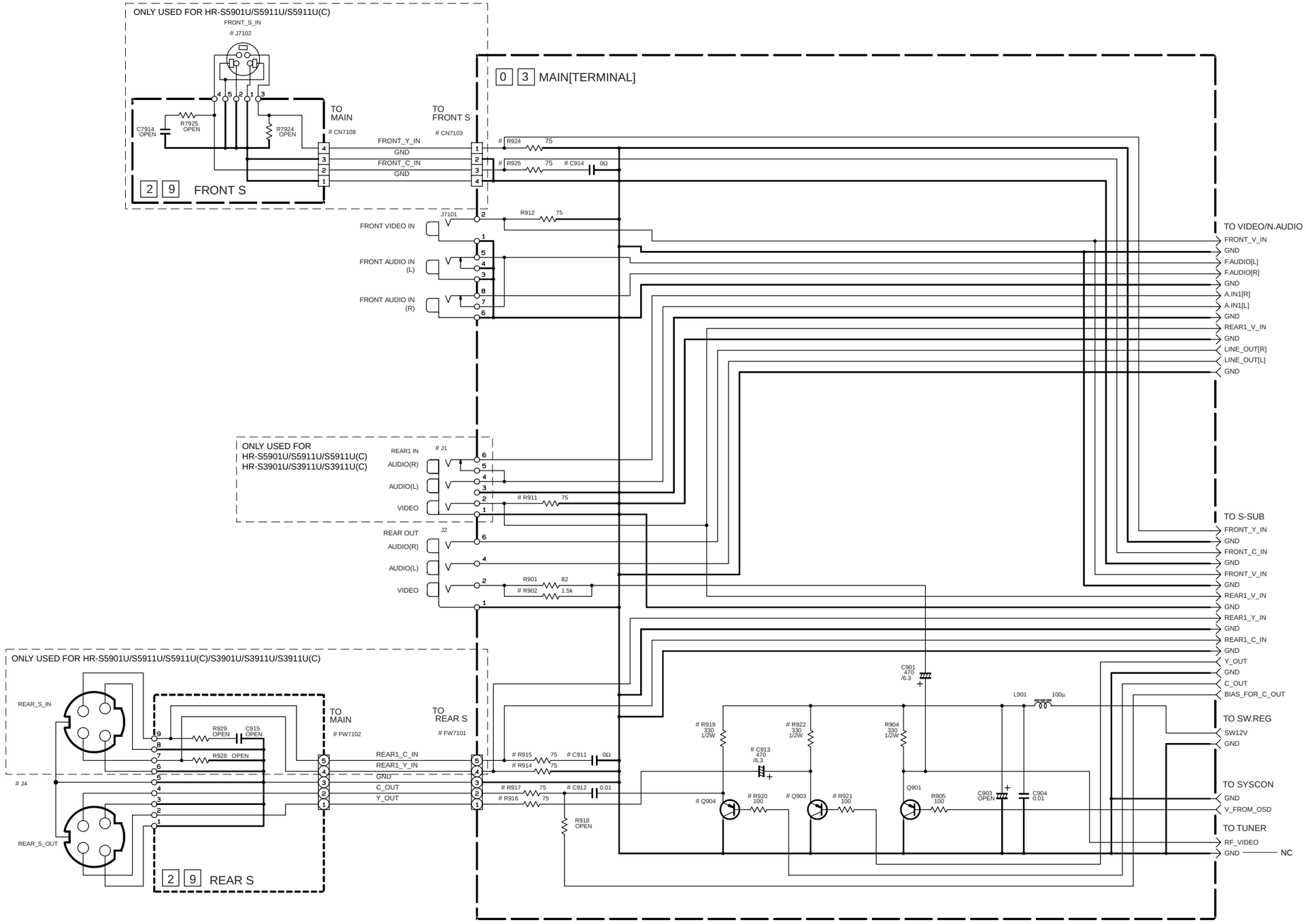
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

LAST NO		VACANT NO
R		
C		
D		
Q		
L		

p20243001a_rev1

4.9 MAIN (TERMINAL) SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



DIFFERENCE TABLE ○: Used ×: Not used

MODEL \ SYMBOL	FRONT S-IN	REAR S-IN			REAR A/V-IN	S-VHS/VHS
	R924 R925 C914 J7102 CN7103 CN7108	R914 R915 C911	J4	FW7101 FW7102	R911 J1	R902 R916 R917 R919-R922 C912 C913 Q903 Q904
HR-S5901U/S5911U/S5911U(C)	○	○	QND0077-001	1-5 PIN	○	○
HR-S3901U/S3911U/S3911U(C)	X	○	QND0077-001	1-5 PIN	○	○
HR-S2901U/S2911U(C)	X	X	QND0076-001	1-3 PIN	X	○
HR-G12	X	X	X	X	○	X

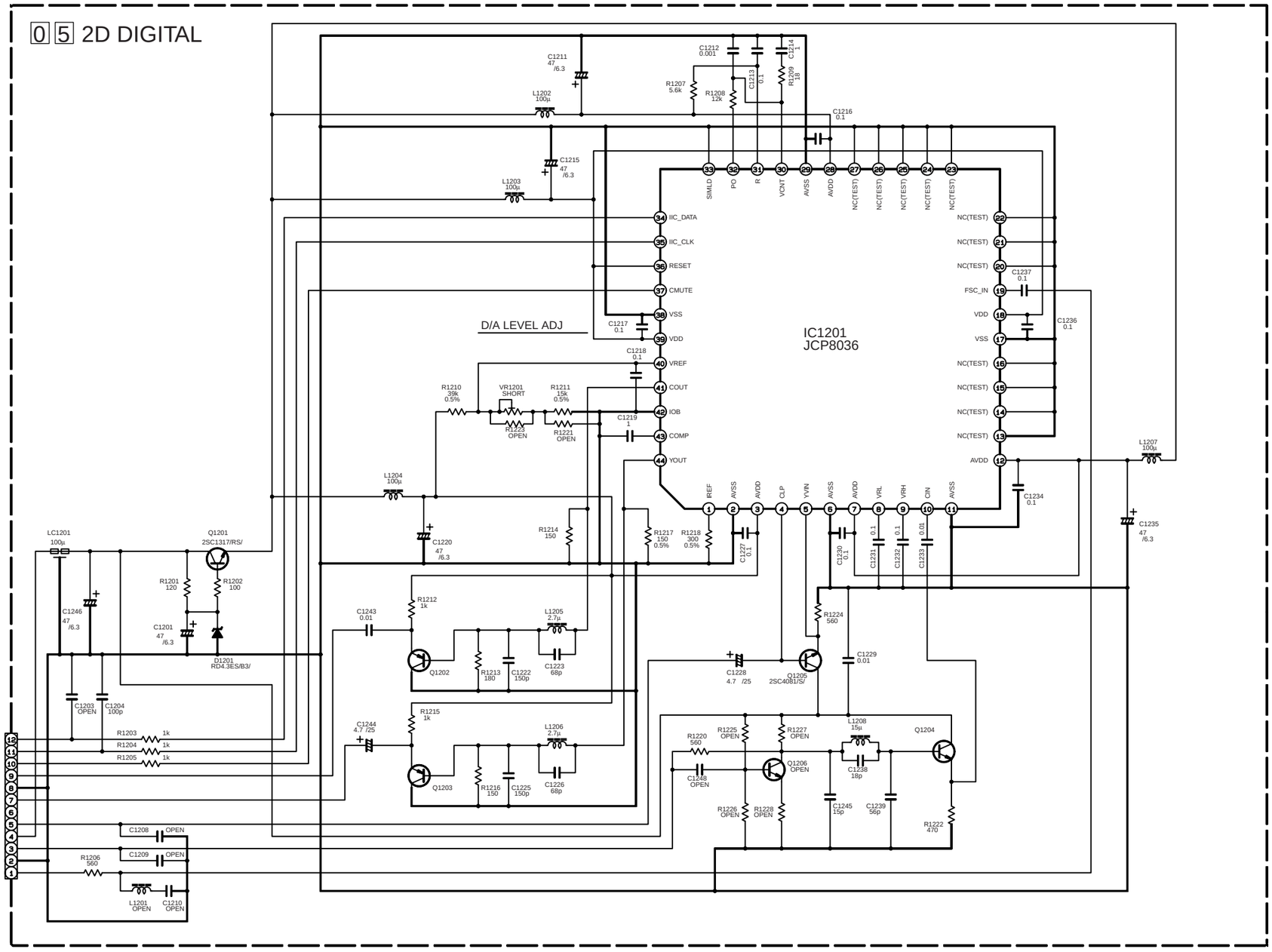
NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN µF.
ALL NPN TYPE TRANSISTORS ARE 2SC4081/QRS/
ALL PNP TYPE TRANSISTORS ARE 2SA1576A/QR/

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

p20259001a_rev0

4.10 2D DIGITAL SCHEMATIC DIAGRAM

Note : The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.



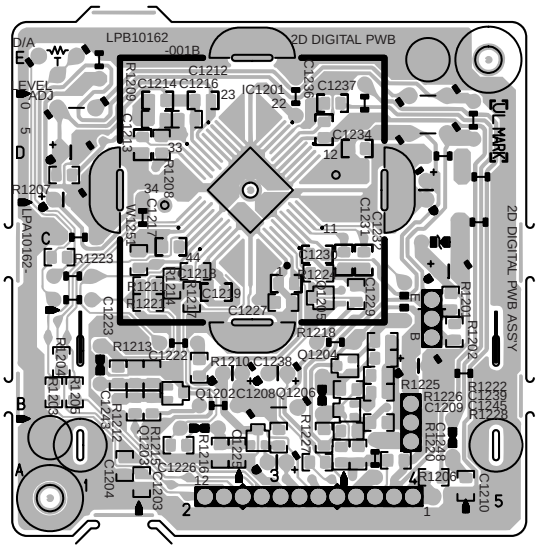
NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ALL NPN TYPE TRANSISTORS ARE 2SC4081/QRS/.
ALL PNP TYPE TRANSISTORS ARE 2SA1576A/QR/.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

p20268001a_rev0

4.11 2D DIGITAL CIRCUIT BOARD

<05> 2D DIGITAL LPB10162-001B



COMPONENT PARTS LOCATION GUIDE <2D DIGITAL> LPB10162-001B

REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
CAPACITOR		C1246	A D 4B	R1207	B C 1D
C1201	A D 4C	C1248	B C 4A	R1208	B C 2D
C1203	B C 2A			R1209	B C 2D
C1204	B C 1A	**CONNECTOR**		R1210	B C 2B
C1208	B C 3A	CN1201	A D 4A	R1211	B C 2C
C1209	B C 4A			R1212	B C 2B
C1210	B C 5A	**DIODE**		R1213	B C 2B
C1211	A D 1D	D1201	A D 4C	R1214	B C 2C
C1212	B C 2D			R1215	B C 3A
C1213	B C 2D	**IC**		R1216	B C 2A
C1214	B C 2D	IC1201	B C 3D	R1217	B C 2C
C1215	A D 1C			R1218	B C 3C
C1216	B C 2D	**COIL**		R1220	B C 3A
C1217	B C 2C	L1201	A D 4B	R1221	B C 2C
C1218	B C 2C	L1202	A D 1D	R1222	B C 4B
C1219	B C 2C	L1203	A D 4D	R1223	B C 1C
C1220	A D 3B	L1204	A D 3B	R1224	B C 3C
C1222	B C 2B	L1205	A D 1B	R1225	B C 3A
C1223	B C 1B	L1206	A D 2A	R1226	B C 4B
C1225	B C 2A	L1207	A D 4D	R1227	B C 3A
C1226	B C 2A	L1208	A D 3B	R1228	B C 4B
C1227	B C 3C				
C1228	A D 3B	**TRANSISTOR**		**OTHER**	
C1229	B C 4C	Q1201	A D 4C	LC1201	A D 4A
C1230	B C 3C	Q1202	B C 2B	VR1201	A D 1E
C1231	B C 3C	Q1203	B C 3A		
C1232	B C 4C	Q1204	B C 3B		
C1233	A D 4C	Q1205	B C 3C		
C1234	B C 4D	Q1206	B C 3B		
C1235	A D 4D				
C1236	B C 3D	**RESISTOR**			
C1237	B C 3D	R1201	B C 4C		
C1238	B C 3B	R1202	B C 4B		
C1239	B C 4B	R1203	B C 1B		
C1243	B C 2B	R1204	B C 1B		
C1244	A D 3A	R1205	B C 1B		
C1245	B C 4B	R1206	B C 4A		

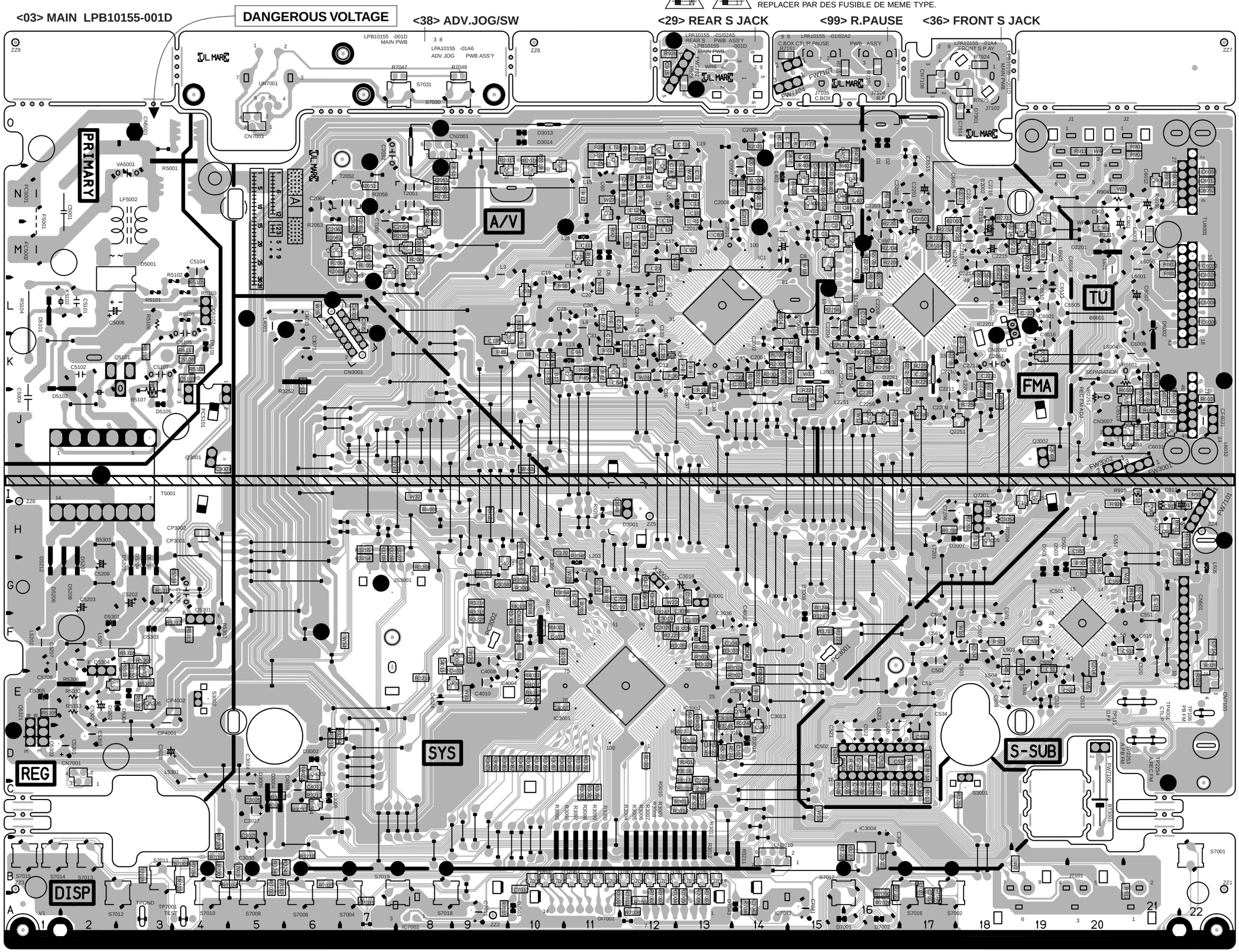
COMPONENT PARTS LOCATION GUIDE <MAIN> LPB10155-001D

REF.NO.	LOCATION
CAPACITOR	
C1	B C 15M
C2	B C 15M
C3	B C 15N
C4	B C 15N
C5	A D 14M
C6	A D 15M
C7	B C 14O
C8	B C 15O
C9	B C 12M
C10	B C 13N
C11	B C 13N
C12	B C 12N
C14	B C 12N
C15	B C 12M
C16	B C 12M
C17	A D 12M
C18	A D 11M
C19	A D 10L
C20	A D 11L
C21	B C 12M
C22	A D 12L
C23	B C 12L
C24	A D 12L
C25	B C 11L
C26	B C 11K
C27	B C 11L
C28	A D 11L
C29	B C 12K
C30	A D 11L
C31	A D 11K
C32	A D 11K
C33	A D 12K
C34	B C 12K
C35	B C 12K
C36	A D 12K
C37	A D 13J
C38	A D 13K
C39	B C 14K
C40	A D 14K
C51	A D 17E
C54	B C 11K
C59	B C 12N
C60	A D 11N
C61	B C 13M
C62	B C 13M
C63	B C 12M
C64	B C 11K
C69	B C 15J
C70	B C 15J
C71	B C 13N
C72	B C 11O
C73	B C 13O
C74	B C 12N
C80	B C 10K
C81	B C 10K
C84	B C 12N
C110	B C 11M
C120	A D 12K
C135	B C 9K
C136	B C 12M
C201	A D 11G
C202	B C 11G
C203	B C 11G
C205	B C 11G
C207	B C 11G
C220	B C 10H
C401	B C 15O
C402	B C 15N
C403	B C 16N
C404	B C 15N
C405	B C 15N
C406	B C 15N
C407	B C 15O
C501	A D 18F
C502	A D 17F
C503	A D 18F
C504	B C 18F
C505	A D 16D
C506	B C 20G
C507	A D 18F
C508	A D 18E
C509	A D 19F
C510	A D 19E
C511	B C 19F
C512	B C 19E
C513	A D 20E
C514	B C 20F
C515	B C 21G
C518	B C 21F
C519	A D 20F
C520	A D 21F
C521	A D 15D
C522	A D 16D
C523	A D 16D
C524	B C 15D
C525	B C 16D
C526	B C 16C
C527	B C 16C
C528	B C 16D
C529	B C 16C
C530	B C 17C
C531	B C 17D
C532	B C 16D
C533	B C 17D
C534	A D 17D
C535	B C 19F
C551	A D 21G
C552	B C 21G
C553	B C 20H
C557	A D 20G
C558	B C 20G
C559	B C 20G
C560	A D 17F
C561	A D 17F
C901	A D 20M
C903	A D 20N
C904	B C 20M
C911	B C 22H
C912	B C 21H
C913	A D 22H
C914	B C 22F
C915	B C 12P
C2001	A D 14K
C2002	A D 14K
C2003	A D 15L
C2004	B C 14L
C2005	A D 14O
C2006	B C 14N
C2007	A D 14N
C2008	A D 14N
C2009	B C 14N
C2010	B C 14N
C2011	A D 14M
C2012	A D 13M
C2014	B C 14K
C2051	B C 9N
C2052	A D 7O
C2053	B C 8N
C2054	B C 8M
C2055	A D 7N
C2061	A D 18K
C2062	B C 7M
C2063	B C 6M
C2064	A D 6N
C2201	A D 17N
C2202	A D 16N
C2203	A D 16N
C2204	A D 15L
C2205	A D 16L
C2206	A D 16L
C2207	B C 16L
C2208	B C 17K
C2209	A D 17J
C2210	A D 17K
C2211	A D 17J
C2212	A D 18K
C2213	B C 18K
C2214	A D 18M
C2215	A D 18M
C2216	A D 18N
C2217	B C 18M
C2218	A D 18M
C2219	A D 18M
C2220	A D 18N
C2221	B C 17M
C2222	B C 19L
C2230	B C 18J
C2231	B C 18K
C2251	B C 16L
C2252	B C 15K
C2253	B C 16K
C2254	A D 16K
C2255	B C 16K
C2256	B C 16K
C2257	B C 16J
C2259	A D 16J
C2261	B C 16K
C2262	B C 16K
C2263	B C 16K
C3007	B C 4I
C3008	B C 19I
C3011	A D 13D
C3013	A D 14E
C3015	B C 13E
C3016	B C 13G
C3017	B C 13G
C3018	A D 12G
C3019	B C 12F
C3020	B C 12F
C3022	B C 14D
C3023	B C 16B
C3024	A D 5D
C3025	B C 5C
C3027	A D 5C
C3028	A D 3D
C3029	B C 5C
C3030	A D 5B
C3035	B C 13F
C3036	A D 13F
C3041	B C 14F
C3042	B C 13F
C3043	B C 13D
C3045	B C 13C
C3048	B C 13D
C3049	B C 11H
C3051	B C 7L
C3053	A D 16B
C3054	B C 18H
C3070	A D 14E
C3071	A D 6K
C4001	B C 7L
C4002	A D 14F
C4004	A D 10E
C4006	B C 10F
C4007	B C 10E
C4008	A D 9F
C4009	B C 10E
C4010	A D 9E
C4011	B C 8F
C4012	B C 10F
C4014	B C 10F
C4016	A D 6C
C4017	B C 6C
C4019	B C 10F
C4022	B C 10F
C4024	A D 8E
C4025	B C 9E
C4031	A D 6L
C5001	A D 2M
C5004	A D 1K
C5006	A D 2L
C5101	A D 2L
C5102	A D 2K
C5103	B C 4K
C5104	A D 4M
C5105	A D 4L
C5106	B C 4K
C5107	A D 3K
C5202	A D 3G
C5203	A D 2G
C5204	A D 3G
C5206	A D 1F
C5207	A D 2F
C5208	A D 2G
C5301	A D 2D
C5302	A D 2E
C5303	A D 2D
C5305	A D 4G
C6005	A D 21K
C6006	B C 22L
C6007	A D 21L
C6008	B C 22L
C6012	A D 21N
C6013	B C 22N
C6020	B C 22M
C6021	B C 22L
C6022	B C 22M
C6031	A D 21J
C6033	B C 21J
C6052	B C 22N
C6053	B C 22N
C6501	B C 17N
C6502	A D 17M
C6503	A D 16M
C6504	A D 19L
C6505	A D 19L
C6506	A D 21K
C6508	B C 18L
C6509	B C 18L
C6510	A D 19L
C6511	B C 18L
C6512	B C 18M
C6513	A D 19M
C6514	B C 17M
C6515	A D 17N
C6516	A D 19K
C6517	B C 19L
C6519	B C 21J
C6532	B C 21J
C6533	B C 21K
C6601	A D 19L
C6602	A D 18L
C6604	B C 18M
C6605	A D 17N
C7011	A D 9A
C7012	B C 10B
C7013	B C 17A
C7014	B C 17A
C7041	A D 15A
C7042	B C 14A
C7206	A D 17H
C7914	B C 18O
CONNECTOR	
CN1	A D 16M
CN501	A D 22G
CN2001	A D 9O
CN2002	A D 18L
CN3001	A D 7L
CN3007	A D 20J
CN3010	A D 14B
CN5001	A D 3O
CN7001	A D 2C
CN7003	A D 5O
CN7103	A D 22E
CN7108	A D 17P
DIODE	
D1	A D 16O
D2	A D 16O
D4	A D 11M
D5	A D 11M
D501	A D 19G
D502	A D 19G
D503	A D 19G
D2201	A D 21M
D2251	A D 16K
D3001	A D 12H
D3002	A D 6D
D3004	A D 5D
D3005	A D 5D
D3006	A D 6C
D3007	A D 17H
D3008	A D 15G
D3013	A D 10O
D3014	A D 10O
D3016	A D 14D
D4003	B C 13F
D5001	B C 3L
D5101	A D 1L
D5102	A D 2K
D5103	A D 4K
D5105	A D 3J
D5203	A D 3H
D5204	A D 3H
D5206	A D 2H
D5207	A D 2H
D5208	A D 2H
D5210	A D 3H
D5212	A D 1H
D5301	A D 2F
D5302	A D 3E
D5303	A D 3F
D5304	A D 3E
D5305	A D 1E
D6002	A D 21K
D7001	A D 15A
D7002	A D 16A
D7003	A D 10A
D7043	A D 14A
D7901	B C 18O
FUSE	
F5001	A D 1N
IC	
IC1	B C 13L
IC501	B C 20F
IC502	A D 15D
IC2201	B C 17L
IC3001	B C 12E
IC3003	B C 13D
IC3004	B C 16B
IC7002	A D 8A
IC7042	A D 14A
COIL	
L1	A D 15M
L2	A D 12N
L3	A D 10M
L4	A D 11L
L5	A D 13J
L11	A D 12L
L13	A D 11K
L15	A D 11N
L19	A D 13O
L20	A D 13N
L28	A D 11M
L201	A D 10G
L203	A D 11G
L401	A D 14N
L501	A D 19E
L503	A D 18F
L504	A D 19E
L505	A D 22G
L901	A D 20M
L2001	A D 15K
L2201	A D 18K
L2251	A D 15J
L4001	A D 5K
L5201	A D 2F
L5202	A D 1F
L5301	A D 4D
L6001	A D 21M
L6003	A D 21M
L6004	A D 21K
L6032	A D 22J
L6050	A D 21M
L6501	A D 19M
L7201	A D 17H
TRANSISTOR	
Q1	B C 15M
Q2	B C 15M
Q3	B C 16M
Q4	B C 16M
Q7	B C 11O
Q8	B C 12O
Q9	B C 12N
Q12	B C 11K
Q17	B C 12N
Q21	B C 11K
Q23	B C 10K
Q32	B C 10L
Q33	B C 11N
Q38	B C 11M
Q401	B C 16N
Q402	B C 15N
Q403	B C 15N
Q404	B C 15N
Q405	B C 15O
Q901	B C 21N
Q903	B C 21H
Q904	B C 21H
Q2001	B C 9N
Q2002	B C 10N
Q2003	B C 10N
Q2051	B C 8M
Q2052	B C 7M
Q2053	B C 7M
Q2054	B C 8M
Q2055	B C 8M
Q2061	B C 7M
Q2062	B C 6M
Q2063	B C 7M
Q2201	B C 19N
Q2202	B C 19K
Q2203	B C 19M
Q2204	B C 19M
Q2251	B C 18J
Q2252	B C 16J
Q2253	B C 17J
Q2254	B C 16J
Q3001	A D 4I
Q3002	A D 19I
Q3004	B C 6C
Q3005	B C 18H
Q3006	B C 14E
Q3007	B C 14D
Q4001	B C 9G
Q4002	B C 6D
Q4003	B C 9E
Q4004	B C 9F
Q5101	A D 2K
Q5102	A D 4L
Q5301	A D 4F
Q5303	A D 1D
Q5304	A D 2E
Q5305	B C 2E
Q5306	B C 3E
Q5308	B C 3E
Q5321	A D 1D
Q6030	B C 21J
Q6031	B C 21J
Q6531	B C 21J
Q6533	B C 21J
Q7001	B C 10B
Q7002	B C 10B
Q7003	B C 10B
Q7004	B C 11B
Q7005	B C 11B
Q7006	B C 11B
Q7007	B C 12B
Q7008	B C 12B
Q7009	B C 12B
Q7010	B C 12B
Q7011	B C 13B
Q7012	B C 13B
Q7013	B C 13B
Q7014	B C 13B
Q7015	B C 11B
Q7151	B C 19H
Q7152	B C 19I
Q7201	A D 18H
RESISTOR	
R1	B C 13N
R2	B C 13N
R3	B C 12N
R5	B C 10K
R6	B C 11L
R7	B C 12K
R8	B C 13K
R9	B C 13K
R12	B C 11N
R21	B C 15J
R22	B C 15J
R25	B C 11O
R26	B C 11O
R27	B C 12O
R28	B C 11O
R29	B C 12O
R31	B C 13N
R32	B C 12O
R33	B C 12N
R34	B C 12N
R36	B C 12K
R42	B C 11K
R44	B C 11K
R45	B C 11K
R46	B C 10K
R48	B C 11K
R49	B C 9K
R66	B C 10L
R68	B C 12N
R75	B C 12M
R77	B C 15O
R79	B C 13J
R90	B C 11M
R93	B C 12N
R104	B C 11M
R118	B C 13J
R120	B C 14O
R201	B C 11G
R202	B C 11G
R401	B C 15N
R402	B C 15N
R403	B C 15N
R404	B C 15O
R405	B C 15N
R407	B C 15N
R408	B C 16O
R503	B C 18F
R504	B C 15D
R505	B C 16D
R506	B C 15C
R507	B C 16C
R508	B C 16C
R509	B C 16C
R510	B C 16D
R511	B C 17C
R512	B C 17C
R513	B C 17C
R514	B C 17D
R515	B C 17D
R522	B C 21G
R524	B C 20G
R901	B C 21O
R902	B C 21O
R904	A D 20N
R905	B C 21N
R911	B C 20O
R912	B C 21B
R914	B C 21H
R915	B C 22H
R916	B C 22I
R917	B C 22H
R918	B C 21I
R919	A D 21I
R920	B C 20H
R921	B C 21H
R922	A D 21H
R924	B C 22E
R925	B C 22F
R928	B C 13P
R929	B C 12P
R2001	B C 14K
R2002	B C 14K
R2003	B C 14K
R2004	B C 14K
R2005	B C 14K
R2006	B C 15K
R2007	B C 15K
R2008	B C 14K
R2009	B C 14K
R2010	B C 15K
R2013	B C 14N
R2014	B C 14N
R2015	B C 14N
R2016	B C 14N
R2017	B C 9O
R2018	B C 10O
R2019	B C 10O
R2021	B C 14O
R2051	B C 8N
R2052	B C 8N
R2053	B C 8N
R2054	B C 8N
R2055	B C 8M
R2056	A D 8N
R2057	B C 7M
R2058	B C 7M
R2059	B C 8M
R2060	B C 8M
R2061	B C 7M
R2062	B C 6M
R2063	A D 6N
R2064	B C 6M
R2065	B C 6M
R2201	B C 16N
R2202	B C 16M
R2203	B C 16M
R2204	B C 16M
R2205	B C 16M
R2206	B C 16L
R2207	B C 16M
R2208	B C 16L
R2209	B C 19M
R2210	B C 19M
R2211	B C 19M
R2212	B C 18N
R2213	B C 19M
R2214	B C 18M
R2215	A D 20M
R2216	B C 18M
R2217	B C 18N
R2218	B C 17M
R2219	B C 17M
R2220	B C 19M
R2230	B C 18J
R2231	B C 18J
R2251	B C 17K
R2252	B C 17K
R2253	B C 17K
R2254	B C 18J
R2255	B C 17K
R2256	B C 16J
R2257	B C 17K
R2258	B C 15L
R3003	B C 12D
R3004	A D 12B
R3005	A D 12B
R3006	A D 12B
R3007	A D 12B
R3008	A D 12B
R3009	A D 12B
R3010	A D 13B
R3011	A D 13B
R3012	A D 13B
R3014	B C 13C
R3015	B C 13C
R3016	B C 13C
R3017	B C 13D
R3018	B C 13D
R3019	B C 13D
R3020	B C 13D
R3021	B C 13D
R3022	B C 13D
R3026	B C 14E
R3027	B C 14E
R3028	B C 14F
R3029	B C 13F
R3030	B C 13F
R3031	B C 13F
R3032	B C 13F
R3035	B C 13F
R3042	B C 12G
R3043	B C 12G
R3044	B C 12G
R3045	B C 12G
R3046	B C 11H
R3054	B C 10G
R3055	B C 10H
R3056	B C 10G
R3057	B C 10G
R3058	B C 9G
R3059	B C 10G
R3060	B C 10G
R3064	B C 10G
R3066	B C 10F
R3079	B C 9D
R3080	B C 9D
R3081	B C 9D
R3082	B C 10D
R3083	B C 10D
R3084	B C 10D
R3085	B C 10D
R3086	B C 10D
R3087	B C 10D
R3088	B C 10D
R3089	B C 11D
R3090	B C 11D
R3091	B C 11D
R3092	B C 11C
R3093	B C 11C
R3094	B C 11C
R3095	A D 10B
R3096	A D 11B
R3097	A D 11B
R3098	A D 11B
R3099	A D 11B
R3100	A D 11B
R3205	B C 7H
R3206	B C 7H
R3207	B C 8H
R3208	B C 8G
R3209	A D 11H
R3210	B C 6B
R3211	A D 14B
R3212	B C 15E
R3213	B C 15F
R3214	B C 9G
R3215	B C 9G
R3216	B C 6D
R3217	B C 6C
R3218	B C 8E
R3219	B C 18C
R3220	B C 13D
R3221	B C 15F
R3222	B C 13D
R3223	B C 12F
R3224	B C 13F
R3225	B C 9F
R3226	B C 15B
R3227	B C 16B
R3232	B C 5C
R3233	B C 6C
R3234	B C 7D
R3235	A D 20J
R3236	B C 17H
R3237	B C 13C
R3238	B C 13C
R3240	B C 5B
R3241	B C 6B
R3242	B C 12G
R3243	B C 14E
R3244	B C 13D
R3245	B C 13D
R3246	B C 15G
R3247	B C 15F
R3252	A D 5K
R3253	B C 6K
R3254	B C 7G
R3255	B C 7H
R4001	B C 8H
R4002	B C 13F
R4003	B C 10F
R4004	B C 13E
R4006	B C 13E
R4010	B C 10E
R4011	B C 10E
R4012	B C 10E
R4018	B C 10F
R4019	B C 10G
R4021	B C 9G
R4022	B C 6D
R4024	A D 10F
R4025	B C 9H
R5001	A D 3O
R5101	A D 3L
R5102	A D 3L
R5103	A D 4L
R5104	A D 1L
R5105	B C 4L
R5106	B C 3K
R5109	A D 4L
R5110	B C 3K
R5111	B C 4K
R5112	B C 3K
R5302	B C 3F
R5303	B C 3E
R5304	B C 4G
R5305	B C 1E
R5306	A D 1E
R5310	B C 3F
R5312	B C 4F
R5313	B C 4F
R5317	B C 3G
R5320	B C 3E
R5321	B C 3E
R5332	A D 2E
R5333	A D 2E
R6020	B C 21M
R6021	B C 21M
R6030	B C 21J
R6031	B C 22J
R6032	B C 21J
R6033	B C 21J
R6034	B C 21J
R6050	A D 21N
R6051	B C 21N
R6502	B C 19L
R6503	B C 21K
R6504	B C 21J
R6531	B C 21J
R6532	B C 21J
R6533	B C 21J
R7001	B C 12A
R7002	B C 12A
R7003	B C 12A
R7004	B C 12A
R7005	B C 13A
R7006	B C 13A
R7007	B C 13A
R7008	B C 12A
R7009	B C 11A
R7010	B C 12A
R7015	B C 9A
R7020	B C 16A
R7021	B C 17B
R7022	B C 16B
R7023	B C 6B
R7024	B C 5B
R7025	B C 3B
R7030	B C 16B
R7031	B C 7A
R7032	B C 5B
R7033	B C 5B
R7034	B C 4B
R7035	B C 4B
R7036	B C 4B
R7037	B C 4B
R7046	B C 14A
R7047	B C 8P
R7048	B C 9P
R7151	B C 14P
R7152	B C 18H
R7155	B C 16P
R7156	B C 16P
R7202	B C 18H
R7203	B C 18H
R7204	A D 18H
R7924	B C 18P
R7925	B C 18P
SWITCH	
S3001	A D 18C
S3002	A D 4E
S7001	A D 22B
S7002	A D 17B
S7004	A D 7B
S7006	A D 6B
S7008	A D 5B
S7010	A D 4B
S7011	A D 3B
S7012	A D 3B
S7013	A D 2B
S7014	A D 1B
S7015	A D 1B
S7016	A D 17B
S7017	A D 16B
S7018	A D 8B
S7019	A D 8B
S7030	A D 9P
S7031	A D 8P
TESTPOINT	
TP106	A D 22E
TP111	A D 21E
TP2253	A D 21D
TP2254	A D 21D
TP4001	A D 21E
TP7001	A D 4A
TPGND	A D 3A
OTHER	
BT3001	A D 20C
CF6031	A D 22J
CP3001	A D 4H
CP3002	B C 4H
CP4001	A D 3E
CP4002	B C 4E
DI7001	A D 12A
FC5001	A D 1N
FC5002	A D 1M
FW3001	A D 21I
FW3002	A D 20I
FW7101	A D 22I
FW7102	A D 13P
FW7104	A D 15P
FW7106	A D 20D
FW7107	A D 15P
J1	A D 20O
J2	A D 21O
J4	A D 14P
J7101	A D 20A
J7102	A D 18P
J7104	A D 16P
J7105	A D 15P
JS3001	A D 7G
LF5002	A D 3N
PC3001	A D 15F
PC3002	A D 9F
PC5101	A D 4K
T2051	A D 8N
T2052	A D 7N
T5001	A D 1J
TU6001	A D 22O
UN7001	A D 5P
VA5001	A D 3N
VR2251	A D 20J
VR6601	A D 21K
WR1	A D 13F
WR2	A D 15G
WR3	A D 13D
WR4	A D 10G
WR5	A D 14F
WR6	A D 13P
X2	A D 12K
X3001	A D 13G
X3002	A D 12G

4.12 MAIN, REAR S JACK, FRONT S JACK, ADV.JOG/SW AND R.PAUSE CIRCUIT BOARDS

T F

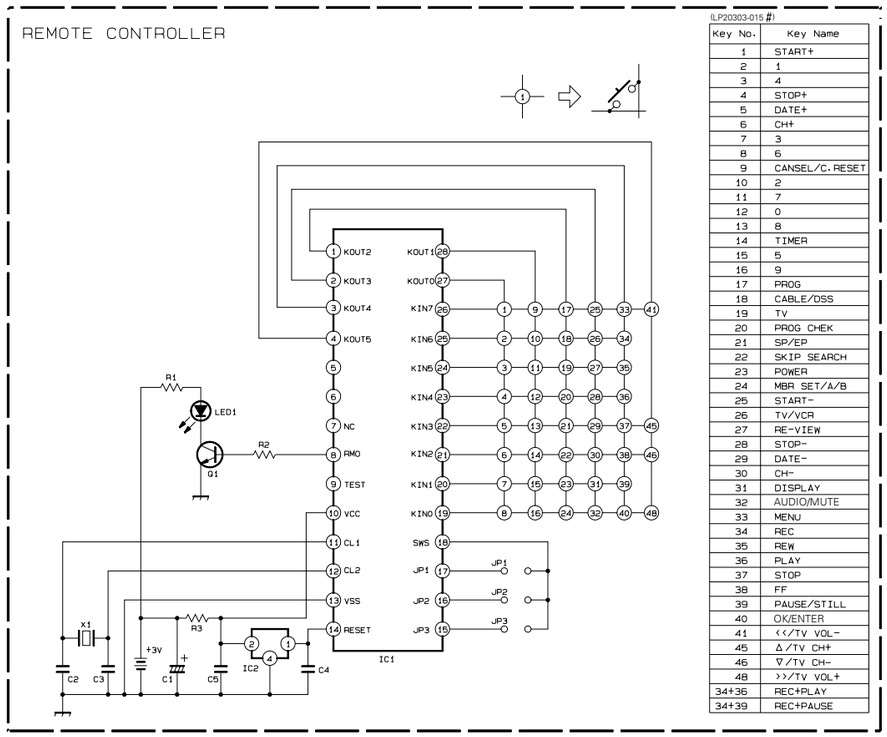
CAUTION :
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE AND RATED FUSE(S).
ATTENTION :
REPLACER PAR DES FUSIBLE DE MEME TYPE.



4.13 REMOTE CONTROLLER SCHEMATIC DIAGRAM

[HR-S5901U/S5911U/S5911U(C)]]

NOTES:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
   Avoid replacing individual parts.
   Replace the entire unit only.

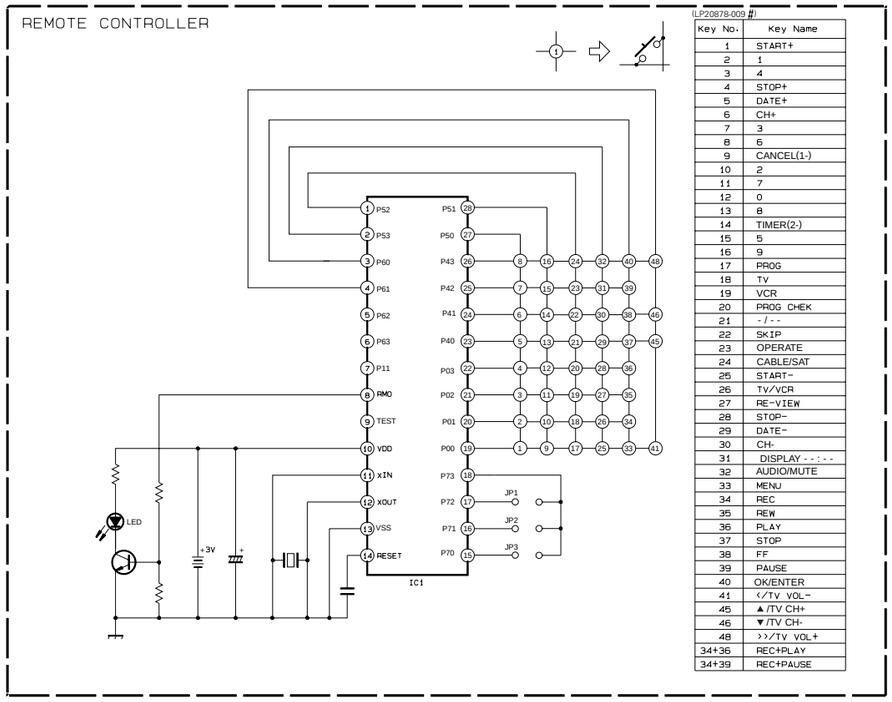


(LP20303-015 #)

Key No.	Key Name
1	START+
2	1
3	4
4	STOP+
5	DATE+
6	CH+
7	3
8	6
9	CANSEL/C.RESET
10	2
11	7
12	0
13	8
14	TIMER
15	5
16	9
17	PROG
18	CABLE/DSS
19	TV
20	PROG CHEK
21	SP/EP
22	SKIP SEARCH
23	POWER
24	MBR SET/A/B
25	START-
26	TV/VCR
27	RE-VIEW
28	STOP-
29	DATE-
30	CH-
31	DISPLAY
32	AUDIO/MUTE
33	MENU
34	REC
35	REW
36	PLAY
37	STOP
38	FF
39	PAUSE/STILL
40	OK/ENTER
41	‹‹/TV VOL-
45	Δ/TV CH+
46	∇/TV CH-
48	››/TV VOL+
34+36	REC+PLAY
34+39	REC+PAUSE

[HR-S3901U/S3911U/S3911U(C)]

NOTES:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
   Avoid replacing individual parts.
   Replace the entire unit only.

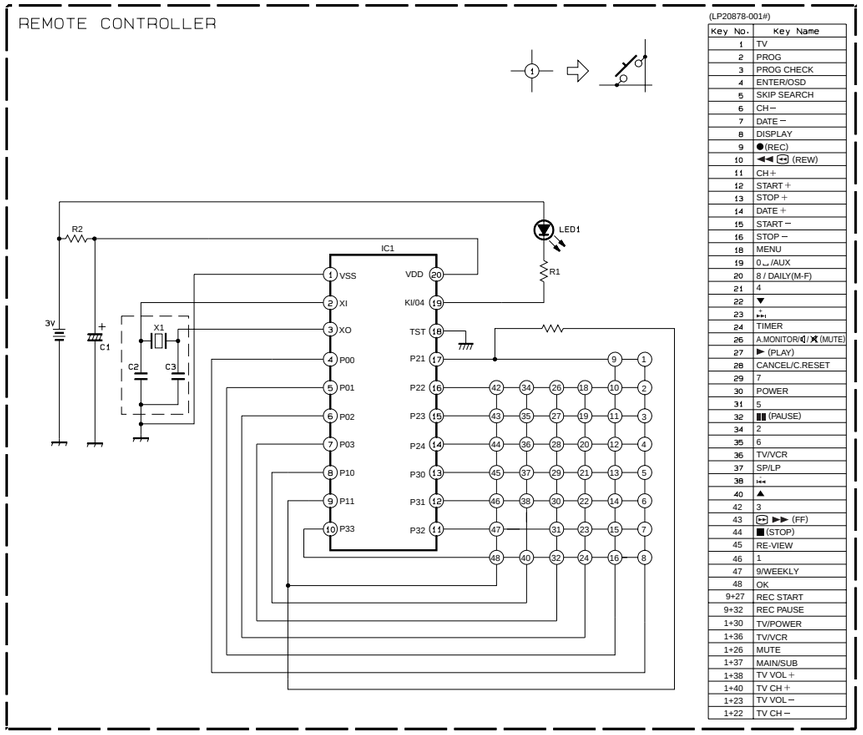


(LP20878-009 #)

Key No.	Key Name
1	START+
2	1
3	4
4	STOP+
5	DATE+
6	CH+
7	3
8	6
9	CANCEL(1-)
10	2
11	7
12	0
13	8
14	TIMER(2-)
15	5
16	9
17	PROG
18	TV
19	VCR
20	PROG CHEK
21	-/--
22	SKIP
23	OPERATE
24	CABLE/SAT
25	START-
26	TV/VCR
27	RE-VIEW
28	STOP-
29	DATE-
30	CH-
31	DISPLAY - - : - -
32	AUDIO/MUTE
33	MENU
34	REC
35	REW
36	PLAY
37	STOP
38	FF
39	PAUSE
40	OK/ENTER
41	‹/TV VOL-
45	▲/TV CH+
46	▼/TV CH-
48	››/TV VOL+
34+36	REC+PLAY
34+39	REC+PAUSE

[HR-S2901U/S2911U(C)]

NOTES:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
   Avoid replacing individual parts.
   Replace the entire unit only.



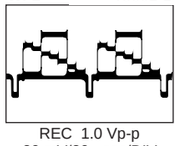
(LP20878-001#)

Key No.	Key Name
1	TV
2	PROG
3	PROG CHECK
4	ENTER/OSD
5	SKIP SEARCH
6	CH-
7	DATE -
8	DISPLAY
9	● (REC)
10	◀◀ (REW)
11	CH+
12	START+
13	STOP +
14	DATE +
15	START -
16	STOP -
18	MENU
19	0 /AUX
20	8 / DAILY(M-F)
21	4
22	▼
23	▪▪
24	TIMER
26	A.MONITOR(🔊)/✖ (MUTE)
27	▶ (PLAY)
28	CANCEL/C.RESET
29	7
30	POWER
31	5
32	▮▮ (PAUSE)
34	2
35	6
36	TV/VCR
37	SP/LP
38	▪▪▪
40	▲
42	3
43	▶▶ (FF)
44	■ (STOP)
45	RE-VIEW
46	1
47	9/WEEKLY
48	OK
9+27	REC START
9+32	REC PAUSE
1+30	TV/POWER
1+36	TV/VCR
1+26	MUTE
1+37	MAIN/SUB
1+38	TV VOL +
1+40	TV CH +
1+23	TV VOL -
1+22	TV CH -

4.14 WAVEFORMS

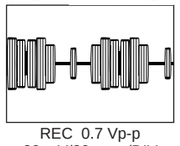
< S-SUB >

WF1 IC501-1



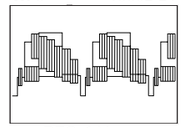
REC 1.0 Vp-p
20 mV/20 µsec/DIV

WF2 IC501-3



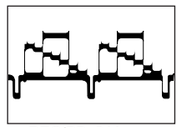
REC 0.7 Vp-p
20 mV/20 µsec/DIV

WF3 IC501-14



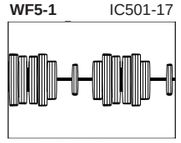
REC 1 Vp-p
20 mV/20 µsec/DIV

WF4 IC501-15



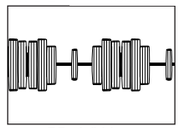
REC/PB 2 Vp-p
50 mV/5 µsec/DIV

WF5-1 IC501-17



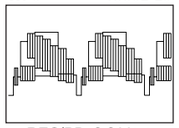
REC 1.5 Vp-p
50 mV/5 µsec/DIV

WF5-2 IC501-17



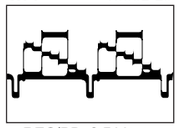
PB 1.2 Vp-p
50 mV/5 µsec/DIV

WF6 IC501-19



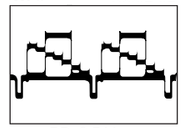
REC/PB 2.2 Vp-p
50 mV/5 µsec/DIV

WF7 IC501-29



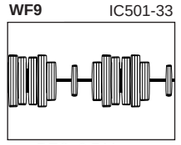
REC/PB 0.5 Vp-p
10 mV/5 µsec/DIV

WF8 IC501-31



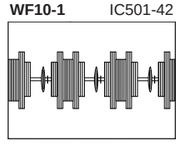
PB 0.5 Vp-p
10 mV/5 µsec/DIV

WF9 IC501-33



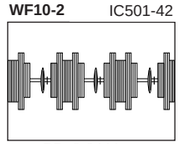
REC 0.7 Vp-p
20 mV/5 µsec/DIV

WF10-1 IC501-42



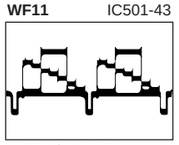
REC 0.57 Vp-p
20 mV/5 µsec/DIV

WF10-2 IC501-42



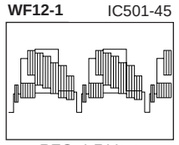
PB 0.64 Vp-p
20 mV/5 µsec/DIV

WF11 IC501-43



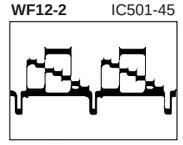
REC/PB 0.76 Vp-p
20 mV/5 µsec/DIV

WF12-1 IC501-45



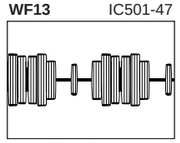
REC 1.7 Vp-p
50 mV/5 µsec/DIV

WF12-2 IC501-45



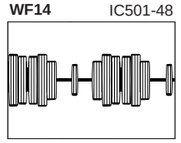
PB 1.7 Vp-p
50 mV/5 µsec/DIV

WF13 IC501-47



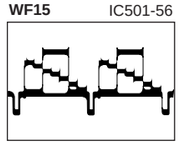
PB 1.5 Vp-p
50 mV/5 µsec/DIV

WF14 IC501-48



PB 0.6 Vp-p
20 mV/5 µsec/DIV

WF15 IC501-56



PB 2.1 Vp-p
50 mV/5 µsec/DIV

4.15 VOLTAGE CHARTS

<MAIN>

MODE PIN NO.	REC	PLAY
IC1		
1	1.4	2.3
2	0	3.1
3	3.0	2.8
4	2.2	1.7
5	2.2	1.6
6	2.9	2.3
7	1.7	0.9
8	0	4.6
9	3.1	2.0
10	2.6	2.5
11	3.6	3.4
12	3.3	2.8
13	3.7	3.4
14	4.0	2.5
15	0	0
16	3.2	3.0
17	1.7	1.6
18	3.3	3.1
19	1.0	3.1
20	3.2	3.1
21	1.7	2.0
22	3.2	3.1
23	3.5	3.2
24	5.8	5.5
25	0.4	0.4
26	0	0
27	1.4	2.5
28	3.2	2.5
29	2.1	2.0
30	2.4	2.2
31	0	0
32	2.8	2.6
33	5.6	5.5
34	3.0	2.5
35	5.8	5.5
36	2.7	2.6
37	2.6	2.4
38	0.3	0
39	1.3	1.2
40	1.9	1.8
41	3.0	3.0
42	2.3	2.3
43	0	0
44	2.4	2.3
45	3.8	3.5
46	4.3	4.1
47	3.2	3.2
48	3.0	2.9
49	5.6	5.5
50	2.8	2.7
51	3.1	3.1
52	0	0
53	2.9	2.9
54	0	0
55	0	0
56	0	0
57	0	0
58	0	0
59	0	0
60	0	0
61	0	0

MODE PIN NO.	REC	PLAY
62	0	0
63	0	0
64	0	0
65	2.3	2.2
66	0	0
67	0	0
68	0	0
69	0	0
70	0	0
71	0	0
72	0	0
73	3.4	3.3
74	0	0
75	0	0
76	0	0
77	0	0
78	0	0
79	5.6	5.5
80	5.6	5.0
81	0	0
82	0	0
83	0	0
84	2.6	2.4
85	2.6	2.4
86	2.7	2.5
87	5.6	5.6
88	0	0
89	0	0
90	0	0
91	0	4.4
92	2.9	2.8
93	0.5	0.5
94	0	0
95	2.9	2.8
96	0	2.8
97	2.8	2.8
98	0	0
99	0	2.8
100	0	0
IC501		
1	2.8	2.8
2	0	0
3	2.1	2.1
4	4.9	4.9
5	2.8	2.8
6	0	0
7	2.1	2.1
8	0.1	0.1
9	2.8	2.8
10	0	0
11	2.1	2.1
12	2.8	2.8
13	0	0
14	2.8	2.8
15	2.3	2.3
16	2.7	2.7
17	2.4	2.4
18	0	0
19	2.3	2.3
20	0	0
21	3.5	3.5
22	2.7	2.7

MODE PIN NO.	REC	PLAY
23	2.9	2.1
24	2.8	2.8
25	2.8	2.8
26	4.9	4.9
27	3.0	3.0
28	2.4	2.3
29	2.5	2.3
30	4.9	4.9
31	2.7	3.0
32	0.1	4.9
33	2.8	2.8
34	2.8	2.8
35	2.8	2.8
36	2.8	2.8
37	0	0
38	3.1	3.1
39	2.8	2.8
40	2.8	2.8
41	2.6	2.6
42	2.8	2.8
43	3.3	3.3
44	2.0	1.9
45	2.0	2.0
46	4.9	4.9
47	3.9	2.4
48	2.8	2.8
49	0	0
50	2.8	2.8
51	2.9	2.9
52	2.4	2.4
53	3.1	3.1
54	2.3	2.4
55	1.9	1.1
56	2.5	3.4
IC502		
1	2.0	2.0
2	0.1	4.9
3	3.3	3.3
4	3.4	3.4
5	4.9	4.9
6	2.2	2.2
7	2.0	2.0
8	4.9	4.9
9	1.5	1.5
10	2.9	2.8
11	2.9	2.8
12	2.9	2.8
13	0	0
14	2.8	2.8
15	2.8	2.8
16	1.9	2.0
17	1.9	2.0
18	1.9	2.0
IC2201		
1	2.4	2.4
2	0	0
3	2.4	2.4
4	0	0
5	2.3	2.3
6	2.5	2.5
7	2.0	2.0
8	0.4	0.4

MODE PIN NO.	REC	PLAY
9	0	0
10	0	0
11	0	0
12	2.0	2.0
13	2.2	2.2
14	0	0
15	0	0
16	2.5	2.5
17	0.7	0.7
18	2.4	2.4
19	2.5	0
20	2.0	0
21	1.9	0
22	2.0	0.7
23	0	0
24	2.0	0.7
25	5.0	5.0
26	2.0	0
27	0	0
28	4.3	2.2
29	4.4	1.9
30	4.9	1.0
31	1.1	1.9
32	2.5	2.5
33	2.5	2.5
34	0.7	0.7
35	2.6	2.6
36	0	0
37	1.6	1.6
38	0	0
39	0	0
40	5.0	5.0
41	0	0
42	5.0	5.0
43	4.9	4.9
44	2.3	2.3
45	0	0
46	3.6	3.6
47	1.5	1.5
48	2.2	2.2
49	3.5	3.5
50	3.5	0
51	0	5.0
52	3.5	0
53	4.4	0
54	2.4	0
55	0	0
56	0	0
57	4.4	0
58	9.3	9.3
59	4.4	4.4
60	0	0
61	2.5	2.5
62	2.4	0
63	2.4	2.4
64	0.5	0.8
IC2202		
1	6.2	6.2
2	0	0
3	6.2	6.2
4	0	0
5	5.5	5.5

MODE PIN NO.	REC	PLAY
6	0	0
7	5.5	5.5
8	0	0
9	6.1	6.1
10	9.3	9.3
11	6.2	6.2
12	0	0
IC3001		
1	2.5	2.7
2	1.9	2.7
3	0.6	0.6
4	0	0
5	5.4	5.4
6	0.9	0
7	1.0	1.0
8	1.0	0
9	0	0
10	1.9	0
11	1.0	1.0
12	1.9	4.0
13	5.3	5.4
14	5.4	0
15	5.3	0
16	0	0
17	4.1	4.1
18	3.5	3.6
19	5.4	0
20	5.4	0
21	1.0	1.2
22	5.3	5.4
23	2.6	2.7
24	0	0
25	5.4	5.4
26	0	2.6
27	5.4	0
28	5.0	0
29	0	0
30	0	0
31	5.3	5.3
32	5.1	5.3
33	0	3.0
34	0	2.9
35	0	0
36	5.3	5.4
37	2.6	2.6
38	2.5	2.5
39	0	0
40	0	0
41	0	0
42	0	0
43	4.8	4.8
44	5.3	5.4
45	0	0
46	0	5.4
47	2.6	2.7
48	0	0
49	2.5	2.6
50	2.7	2.8
51	5.5	5.6
52	2.7	2.7
53	2.8	2.8
54	0	0

MODE PIN NO.	REC	PLAY
55	0	5.6
56	0	0
57	5.2	5.2
58	0	0
59	5.3	5.4
60	0	0
61	2.8	2.8
62	0	0
63	0	0
64	0	0
65	1.4	1.4
66	0	0
67	2.6	2.6
68	2.6	2.6
69	2.6	2.7
70	2.6	2.6
71	0	0
72	2.6	4.2
73	3.4	5.4
74	3.1	2.6
75	2.1	2.6
76	2.6	2.6
77	5.0	5.0
78	5.2	5.3
79	2.7	2.7
80	0	0
81	4.6	0
82	0	0
83	0	3.6
84	0	0
85	0	0
86	5.3	5.4
87	0	0
88	5.3	5.3
89	5.4	5.4
90	0	0
91	0	0
92	5.4	5.3
93	0	0
94	5.3	5.4
95	4.3	4.3
96	4.3	4.3
97	4.3	4.3
98	4.2	4.3
99	4.2	4.3
100	0	0
IC3004		
1	0	0
2	0	0
3	0	0
4	0	0
5	4.6	4.6
6	4.5	4.5
7	0	0
8	4.9	4.9
IC7002		
1	0	5.1
2	0	5.0
3	0	0
CN1		
1	0	0
2	0	0

MODE PIN NO.	REC	PLAY
3	0	0
4	2.6	2.5
5	2.6	2.5
6	2.6	2.5
7	2.1	0
8	2.0	0
9	2.1	0
10	0	0
11	0	0
CN501		
1	4.0	4.1
2	0	0
3	0.5	2.8
4	5.5	5.6
5	2.3	2.3
6	0	0
7	3.6	3.8
8	0	0
9	3.0	3.2
10	0	0
11	3.7	3.7
12	4.2	4.2
CN2001		
1	0	0
2	0	0
3	0	0
4	0	0
5	2.4	2.6
6	2.8	2.7
CN2002		
1	0	0
2	0	0
CN3001		
1	2.6	2.6
2	13.0	13.5
3	2.5	5.5
4	0	0
5	7.7	8.0
6	0	0
7	0	0
8	13.2	0
9	2.9	3.0
10	2.7	0
11	1.4	1.4
12	2.9	2.8
CN7001		
1	5.4	5.5
2	0	0
3	0	0
4	5.4	5.5
CN7103		
1	0	0
2	0	0
3	0	0
4	0	0
FW3001		
1	0	0
2	0	0
3	0	0
FW7001		
1	2.6	2.8
2	0	0

MODE PIN NO.	REC	PLAY
3	0	0
4	0	0
5	0	0

<2D DIGITAL>

MODE PIN NO.	REC	PLAY
IC1201	-	-
CN1201		
1	4.0	4.1
2	0	0
3	0.5	2.8
4	5.5	5.6
5	2.3	2.3
6	0	0
7	3.6	3.8
8	0	0
9	3.0	3.2
10	0	0
11	3.7	3.7
12	4.2	4.2

<REAR S JACK>

MODE PIN NO.	REC	PLAY
FW7102		
1	2.6	2.8
2	0	0
3	0	0
4	0	0
5	0	0

[HR-S5901U/S5911U/S5911U(C)]
<FRNT S JACK>

MODE PIN NO.	REC	PLAY
CN7108		
1	0	0
2	0	0
3	0	0
4	0	0

[HR-S5901U/S5911U/S5911U(C)/ S3901U/S3911U/S3911U(C)]
<ADV.JOG/SW>

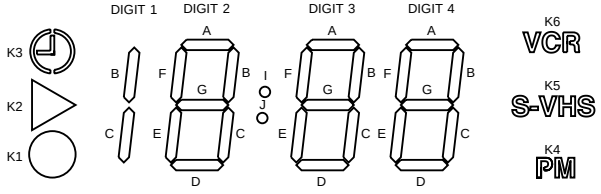
MODE PIN NO.	REC	PLAY
CN7003		
1	5.4	5.4
2	0	0
3	0	0
4	5.4	5.5

[HR-S5901U/S5911U/S5911U(C)/ S3901U/S3911U/S3911U(C)]
<R.PAUSE>

MODE PIN NO.	REC	PLAY
FW7104		
1	0	0
2	0	0
3	0	0

4.16 FDP GRID ASSIGNMENT AND ANODE CONNECTION

GRID ASSIGNMENT



ANODE CONNECTION

No.	CONNECTION
1	CATHODE 2G, 3G, 4G, I, J
2	CATHODE 2F, 3F, 4F, K6
3	CATHODE 2E, 3E,4E, K1
4	CATHODE 2D, 3D, 4D, K4
5	CATHODE 1C, 2C, 3C, 4C, K5
6	CATHODE 1B, 2B, 3B, 4B, K2
7	CATHODE 2A, 3A, 4A, K3
8	COMMON ANODE K3, K2, K5, K4, K1, K6, I, J
9	COMMON ANODE DIGIT4
10	COMMON ANODE DIGIT3
11	COMMON ANODE DIGIT2
12	COMMON ANODE DIGIT1

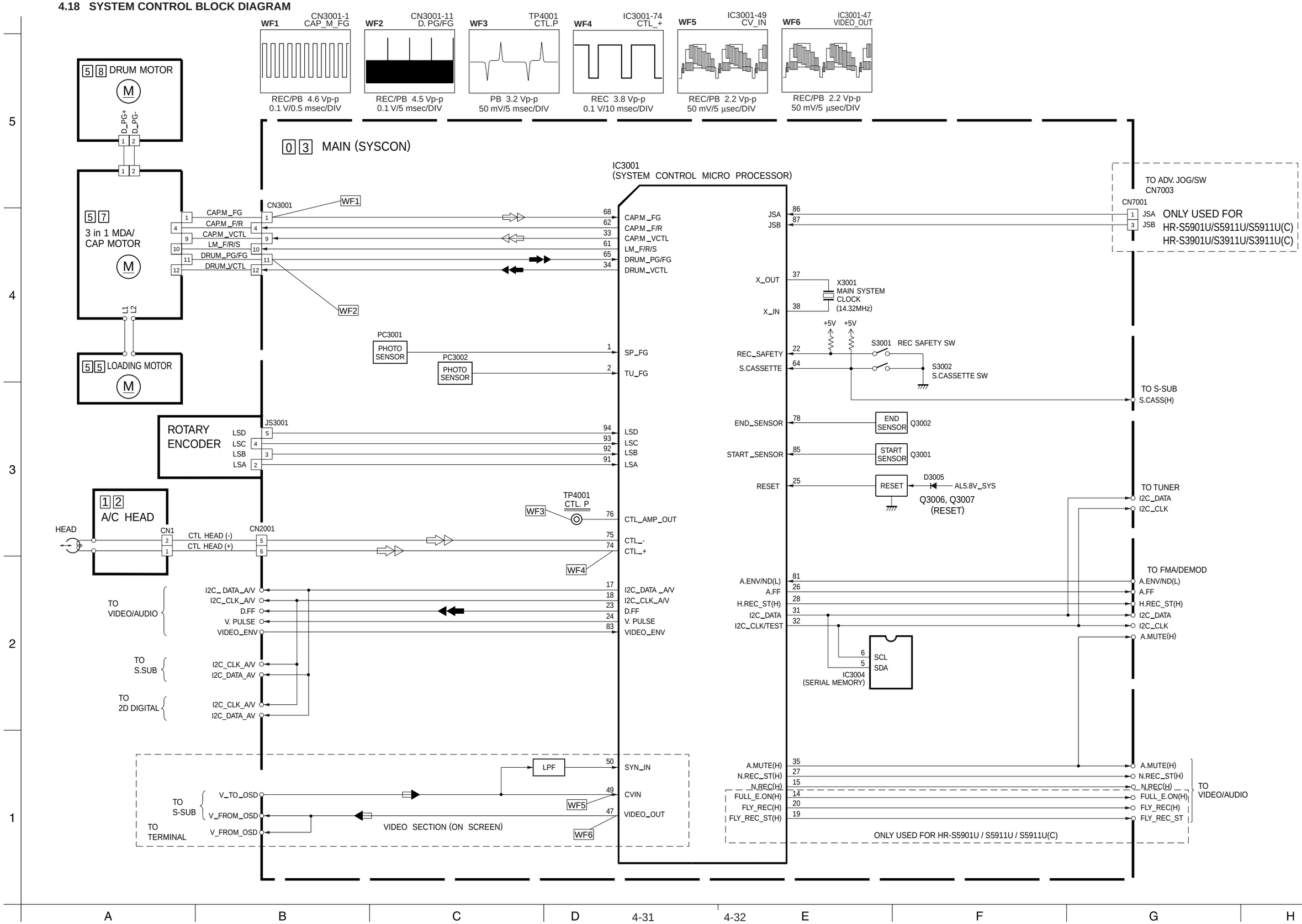
4.17 CPU PIN FUNCTION

<SYSCON IC3001>

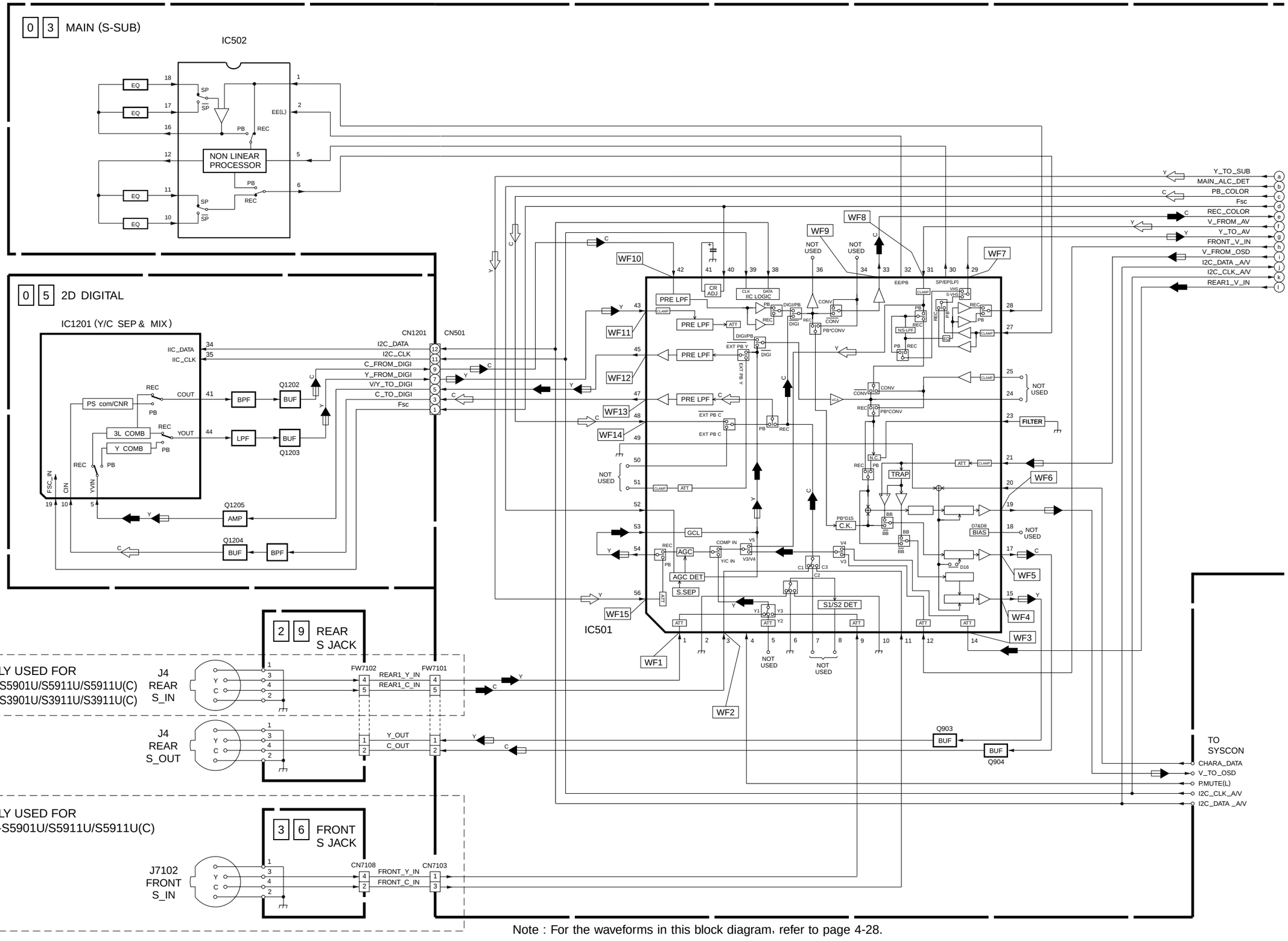
PIN NO.	LABEL	IN/OUT	FUNCTION
1	SP_FG	IN	DETECTION SIGNAL FOR SUPPLY REEL ROTATION/TAPE REMAIN
2	TU_FG	IN	DETECTION SIGNAL FOR TAKE-UP REEL ROTATION/TAPE REMAIN
3	BS_DIGI_RC_IN/R.PAUSE/COMPU_IN	IN	BS DIGITAL RC INPUT/REMOTE PAUSE CONTROL/A/V COMPULINK INPUT
4	DIG7	OUT	LED DRIVE
5	RC	IN	REMOTE CONTROL DATA INPUT
6	D_A	OUT	LED DRIVE
7	D_B	OUT	LED DRIVE
8	D_C	OUT	LED DRIVE
9	D_D	OUT	LED DRIVE
10	D_E	OUT	LED DRIVE
11	D_F	OUT	LED DRIVE
12	D_G	OUT	LED DRIVE
13	BS_DIGI_LINK/RMO	OUT	BS DIGITAL LINK OUTPUT/ REMOTE CONTROL(SATELLITE RECEIVER)OUTPUT
14	FULL. E_ON[H]	OUT	FULL ERASE ON:H
15	N. REC[H]	OUT	NORMAL AUDIO REC MODE(REC:H)
16	AGC_CTL	IN	DETECTION SIGNAL FOR AGC
17	I2C_DATA_A/V	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR THE VIDEO/AUDIO IC
18	I2C_CLK_A/V	OUT	SERIAL DATA TRANSFER CLOCK FOR THE VIDEO/AUDIO IC
19	SP_SHORT(H)/FLY_REC_ST[H]	OUT	MODE SELECT/ FLY REC START: H
20	EP_SHORT(H)/FLY_REC[H]	OUT	MODE SELECT/ REC TIMING CONTROL(FLY ERASE ON: H)
21	SIDE BAND GAIN	OUT	VOLTAGE CONTROL SIGNAL FOR VIDEO FREQUENCY RESPONSE
22	REC_SAFETY	IN	REC SAFETY SWITCH DETECT (SW ON:L)
23	D.FF	OUT	ROTATION DETECTION SIGNAL FOR DRUM MOTOR/TIMING CONTROL SIGNAL FOR REC
24	V.PULSE	OUT	V.PULSE ADDITION TIMING CONTROL
25	RESET	-	RESET TERMINAL
26	A.FF	OUT	AUDIO FF OUTPUT
27	N.REC_ST(H)	OUT	NORMAL AUDIO REC START:H
28	H.REC_ST(H)	OUT	HiFi AUDIO REC START:H
29	SLOWPULSE	OUT	MEMORY TIMING CONTROL IN THE SLOW MODE
30	V.P_CTL	OUT	V.PULSE ADDITION TIMING CONTROL
31	I2C_DATA	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR MEMORY IC
32	I2C_CLK/TEST	OUT	SERIAL DATA TRANSFER CLOCK FOR MEMORY IC/MECHANISM TEST SIGNAL
33	CAP.M_VCTL	OUT	CAPSTAN MOTOR CONTROL
34	DRUM_VCTL	OUT	DRUM MOTOR CONTROL
35	A.MUTE(H)	OUT	AUDIO MUTE CONTROL (MUTE ON:H)
36	VDD	-	SYSTEM POWER
37	X_OUT	-	SYSTEM CLOCK(14.32MHz)
38	X_IN	-	SYSTEM CLOCK(14.32MHz)
39	VSS	-	GND
40	XC_IN	-	TIMER CLOCK(32.768MHz)
41	XC_OUT	-	TIMER CLOCK(32.768MHz)
42	CLK SEL	-	SELECT FOR BACKUP METHOD(LITHIUM OR E.CAPACITOR):H
43	CH_SW	OUT	RF CHANNEL SWITCHING
44	TU_MUTE[H]	OUT	TUNER AUDIO MUTE CONTROL (MUTE:H)
45	V.REF	IN	REFERENCE VOLTAGE INPUT
46	CONV_CTL[H]	IN	R/F CONVERTER ON/OFF CONTROL
47	VIDEO_OUT	OUT	COMPOSITE VIDEO SIGNAL OUTPUT
48	VSS2	-	GND
49	CV_IN	IN	COMPOSITE VIDEO SIGNAL INPUT
50	SYS_IN	IN	COMPOSITE SYNCHRONIZING SIGNAL FOR SERVO, VERTICAL SYNCHRONIZING SIGNAL FOR OSD

PIN NO.	LABEL	IN/OUT	FUNCTION
51	VDD2	-	SYSTEM POWER
52	AFCC	IN	FILTER INPUT FOR HORIZONTAL SYNCHRONIZING OF OSD CHARACTER
53	AFCLPF	OUT	FILTER OUTPUT FOR HORIZONTAL SYNCHRONIZING OF OSD CHARACTER
54	TRICK [H]	IN	SPECIAL PLAYBACK:H
55	P. MUTE [L]	OUT	PICTURE CONTROL(MUTE ON:L)
56	ET_REC [H]	IN/OUT	ET REC:H
57	CTL_GAIN	OUT	CONTROL AMP OUT FREQUENCY RESPONSE SWITCHING
58	CHARAE	OUT	OSD CHARACTER DATA (FRINGE) OUTPUT
59	P.CTL [H]	OUT	CONTROL SIGNAL FOR SWITCHING POWER SUPPLY
60	CHARAM	OUT	OSD CHARACTER DATA OUTPUT
61	LM_F/R/S	OUT	LODING MOTOR DRIVE
62	CAP. M_F/R	OUT	CAPSTAN MOTOR DRIVE
63	HS_FR	OUT	HI SPEED FF/REW
64	S. CASSETTE	IN	DETECTION SIGNAL FOR SVHS CASSETTE (SVHS: H)
65	DRUM_PG/FG	IN	DRUM FG PULSE, DRUM PICKUP PULSE(SWITCHING PULSE)INPUT
66	S_DET	IN	S-VHS MODE:H
67	C. FG_AMP_OUT	OUT	SET-UP OUTPUT FOR CAPSTAN FG AMPLIFICATION FACTOR
68	CAP. M_FG	IN	CAPSTAN FG PULSE INPUT
69	AMP_VREF_OUT	OUT	AMP CIRCUIT REFERENCE VOLTAGE OUTPUT
70	AMP_VREF_IN	IN	AMP CIRCUIT REFERENCE VOLTAGE INPUT
71	AVSS	-	GND FOR ANALOG CIRCUIT
72	AMP_C	IN	CAPACITOR CONNECT TERMINAL FOR CTL AMP CIRCUIT
73	AVCC	-	SYSTEM POWER FOR ANALOG CIRCUIT
74	CTL(+)	IN/OUT	CONTROL SIGNAL(+)
75	CTL(-)	IN/OUT	CONTORL SIGNAL(-)
76	CTL_AMP_OUT	OUT	CTL PULSE OUTPUT
77	PROTECT	IN	DETECTION SIGNAL FOR SWITCHING POWER SUPPLY
78	END_SENSOR	IN	END SENSOR
79	AFC/JUST_CLK	IN	TUNING CHECK/JUST CLK INPUT
80	LED	IN	SAP DETECT
81	A. ENV/ND [L]	IN	AUDIO PB FM ENV. INPUT/NON HiFi MODEL:L
82	WIDE_DET/COMP_OUT	OUT	WIDE ASPECT DETECTION/A/V COMPULINK OUTPUT
83	VIDEO_ENV	IN	AUTO TRACKING DETECT/INPUT THE AVERAGE OF PLAYBACK VIDEO SIGNAL
84	NC	-	NC
85	START_SENSOR	IN	START SENSOR
86	JSA	IN	INPUT FOR THE JOG SHUTTLE
87	JSB	IN	INPUT FOR THE JOG SHUTTLE
88	KEY1	IN	OPERATION CONTROL SIGNAL
89	KEY2	IN	OPERATION CONTROL SIGNAL
90	POWER_DET	IN	DETECTION SIGNAL FOR POWER DOWN OF AC POWER SUPPLY
91	LSA	IN	MECHANISM MODE DETECT(A)
92	LSB	IN	MECHANISM MODE DETECT(B)
93	LSC	IN	MECHANISM MODE DETECT(C)
94	LSD	IN	MECHANISM MODE DETECT(D)
95	DIG1	OUT	LED DRIVE
96	DIG2	OUT	LED DRIVE
97	DIG3	OUT	LED DRIVE
98	DIG4	OUT	LED DRIVE
99	DIG5	OUT	LED DRIVE
100	DIG6	OUT	LED DRIVE

4.18 SYSTEM CONTROL BLOCK DIAGRAM



4.19 VIDEO BLOCK DIAGRAM



Note : For the waveforms in this block diagram, refer to page 4-28.

0 3 MAIN (VIDEO,TERMINAL)

WF1 IC1-27
PB 2.1 Vp-p
50 mV/5 µsec/DIV

WF2 IC1-30
PB 0.6 Vp-p
20 mV/5 µsec/DIV

WF3 IC1-1
PB 0.4 Vp-p
20 mV/1 msec/DIV

WF4 TP106 PB.FM
PB 0.4 Vp-p
0.1 V/5 msec/DIV

WF5 TP111 D.FF
REC/PB 3.3 Vp-p
0.1 V/5 msec/DIV

WF6 IC1-85
REC 3 Vp-p
0.1 V/1 msec/DIV

WF7 IC1-14
PB 0.5 Vp-p
10 mV/5 µsec/DIV

WF8 IC1-13
REC/PB 0.5 Vp-p
10 mV/5 µsec/DIV

WF9 IC1-11
REC/PB 0.5 Vp-p
10 mV/5 µsec/DIV

WF10 IC1-16
REC 0.68 Vp-p
20 mV/5 µsec/DIV

Y_TO_SUB
MAIN_ALC_DET
PB_COLOR
Fsc
REC_COLOR
V_FROM_AV
Y_TO_AV
FRONT_V_IN
V_FROM_OSD
I2C_DATA _A/V
I2C_CLK_A/V
REAR1_V_IN

TO FMA/DEMOD Fsc

TO SYSCON D.FF, VIDEO_ENV

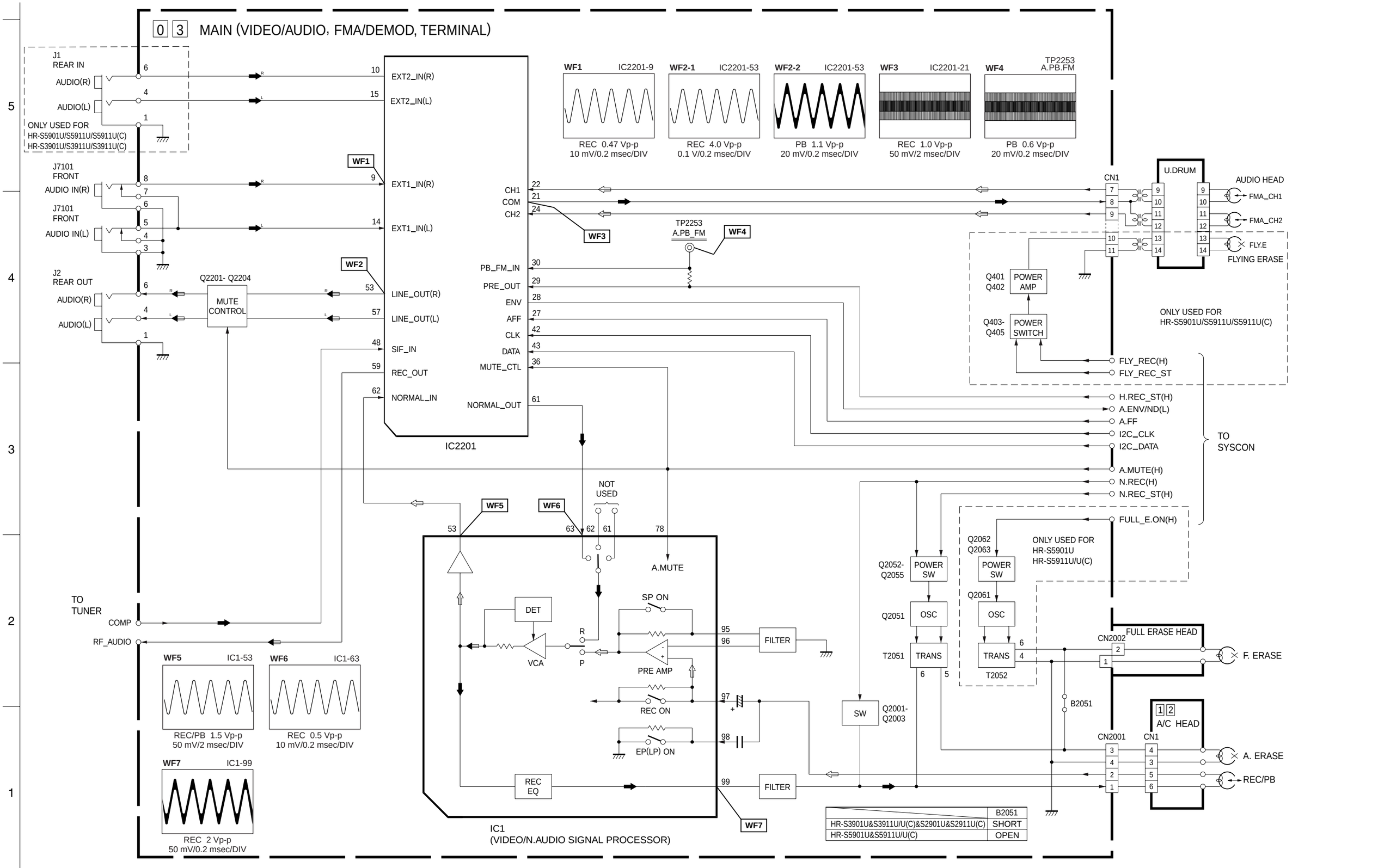
FRONT VIDEO IN J7101
ONLY USED FOR HR-S5901U/S5911U/S5911U(C) HR-S3901U/S3911U/S3911U(C)
REAR1 VIDEO IN J1
REAR VIDEO OUT J2
TO TUNER TU_VIDEO, RF_VIDEO
TO SYSCON V_FROM_OSD, V.PULSE, S_DET

Q901 BUF

IC1 (VIDEO & AUDIO SIGNAL PROCESSOR)

U.DRUM CN1 VIDEO HEAD: SP CH2, SP CH1, LP/EP_CH2, LP/EP_CH1

4.20 AUDIO BLOCK DIAGRAM



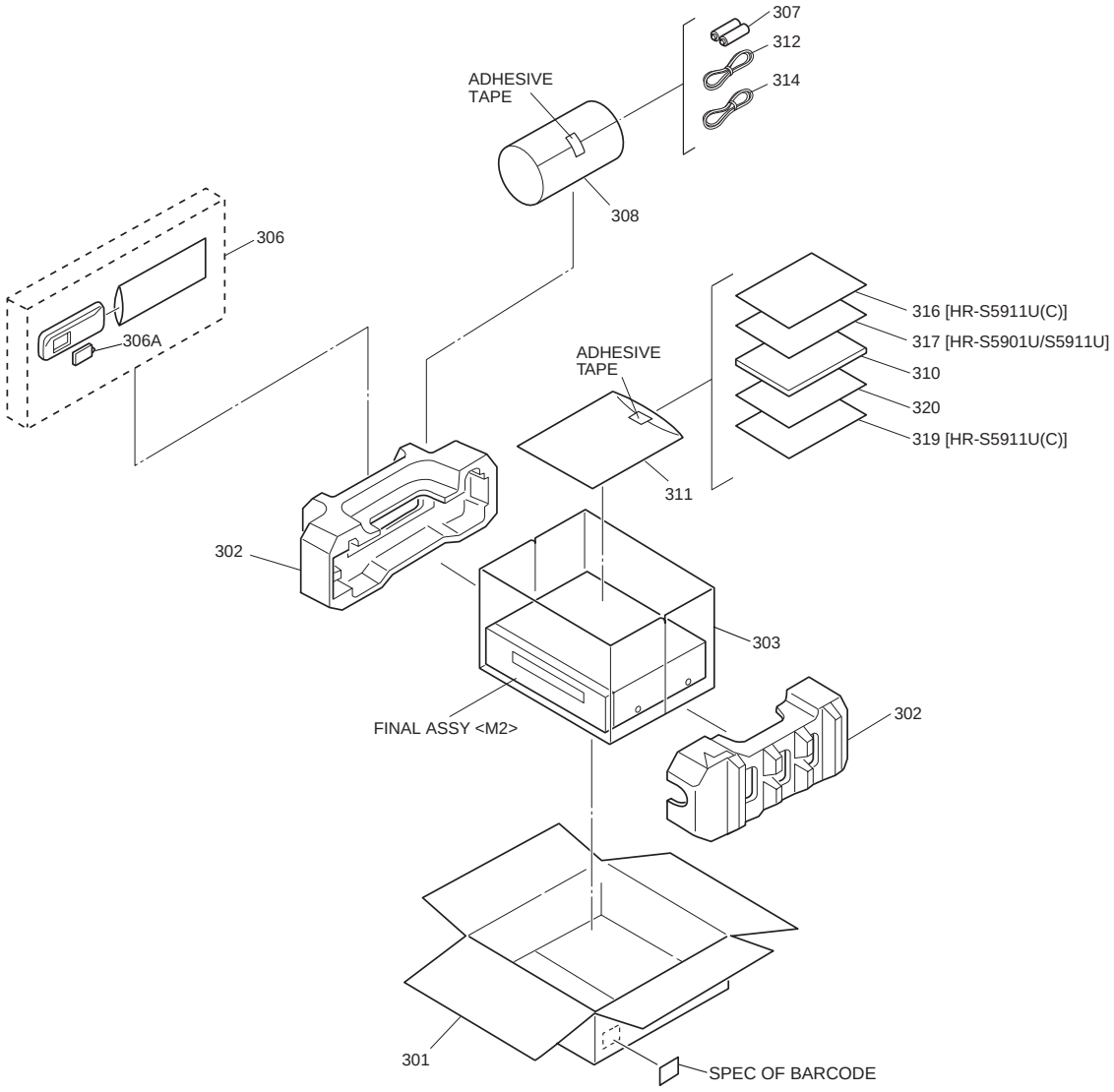
SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING AND ACCESSORY ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.



# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
**********			

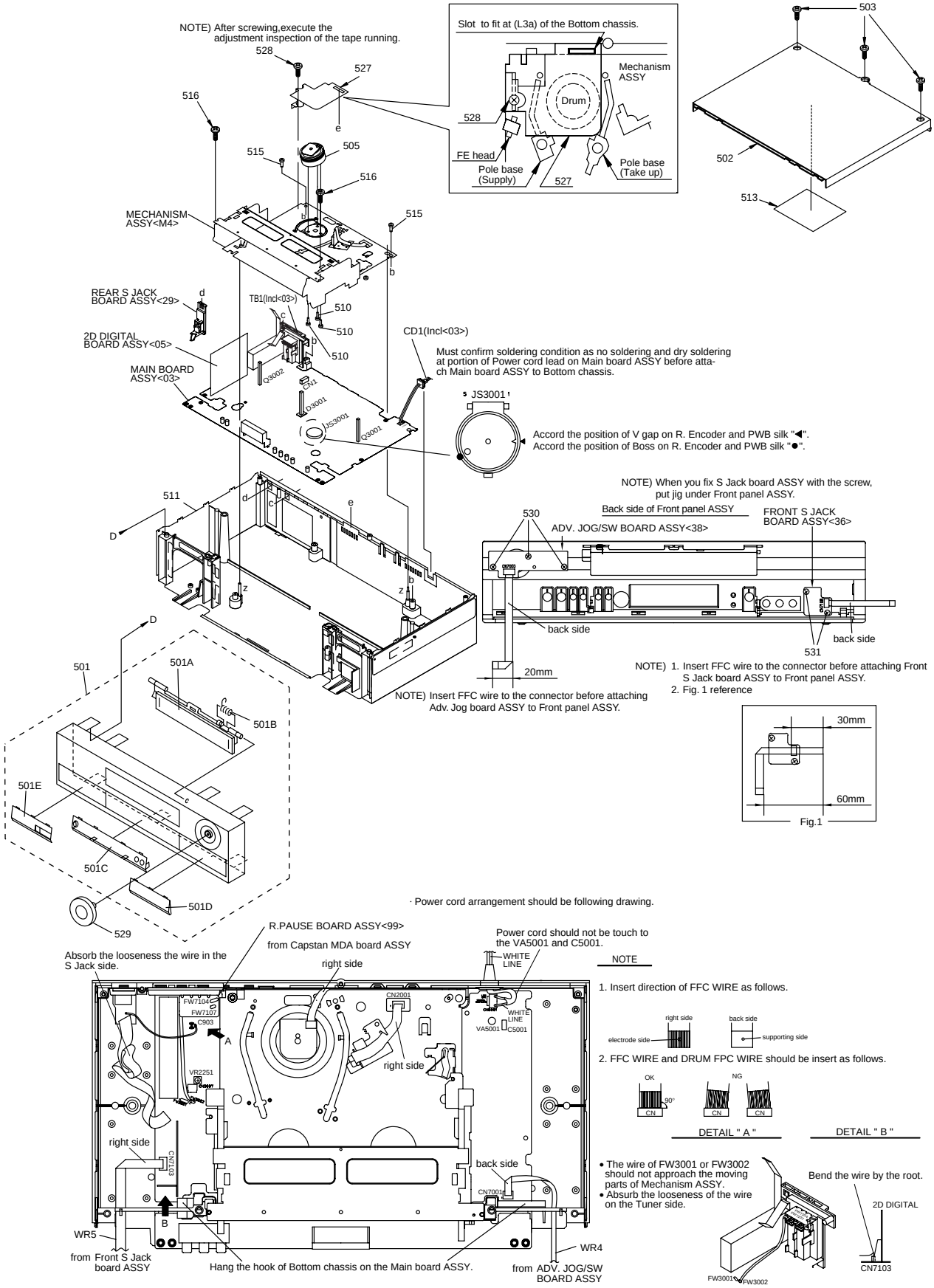
PACKING AND ACCESSORY ASSEMBLY <M1>

	301	LP31089-007A	PACKING CASE,S5901U
		LP31089-010A	PACKING CASE,S5911U/S5911U(C)
	302	LP31091-001B	CUSHION ASSY
	303	PQM30021-95	POLY BAG
	306	LP20303-015B	REMOTE CONTROLLER
	306A	LP40225-002A	COVER(BATTERY)
	307	–	BATTERY,X2("AA"TYPE)
	308	QPC02202230P	POLY BAG
⚠	310	LPT0638-001A	INST.BOOK(EN)
⚠		LPT0638-002A	INST.BOOK(FR),S5911U(C)
	311	QPC02503530P	POLY BAG
	312	PEAC0294-04	RF CABLE
	314	QAM0004-002	S CABLE
	316	BT-52004-2	WARRANTY CARD,S5911U(C)
	317	BT-51028-1	REGIST.CARD,S5901U/S5911U
	319	BT-20071B	SER.NET CARD,S5911U(C)
	320	LP30666-004A	SHEET(COUPON)

5.2 FINAL ASSEMBLY <M2>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.


NOTE) After screwing,execute the adjustment inspection of the tape running.
Slot to fit at (L3a) of the Bottom chassis.
Mechanism ASSY
Drum
FE head
Pole base (Supply)
Pole base (Take up)
MECHANISM ASSY<M4>
REAR S JACK BOARD ASSY<29>
2D DIGITAL BOARD ASSY<05>
MAIN BOARD ASSY<03>
TB1(Incl<03>)
CD1(Incl<03>)
Must confirm soldering condition as no soldering and dry soldering at portion of Power cord lead on Main board ASSY before attach Main board ASSY to Bottom chassis.
JS3001
Accord the position of V gap on R. Encoder and PWB silk "◀".
Accord the position of Boss on R. Encoder and PWB silk "●".
NOTE) When you fix S Jack board ASSY with the screw, put jig under Front panel ASSY.
Back side of Front panel ASSY
ADV. JOG/SW BOARD ASSY<38>
FRONT S JACK BOARD ASSY<36>
back side
20mm
NOTE) Insert FFC wire to the connector before attaching Adv. Jog board ASSY to Front panel ASSY.
NOTE) 1. Insert FFC wire to the connector before attaching Front S Jack board ASSY to Front panel ASSY.
2. Fig. 1 reference
30mm
60mm
Fig.1
· Power cord arrangement should be following drawing.
Absorb the looseness the wire in the S Jack side.
R.PAUSE BOARD ASSY<99>
from Capstan MDA board ASSY
right side
Power cord should not be touch to the VA5001 and C5001.
WHITE LINE
NOTE
1. Insert direction of FFC WIRE as follows.
2. FFC WIRE and DRUM FPC WIRE should be insert as follows.
DETAIL " A "
DETAIL " B "
• The wire of FW3001 or FW3002 should not approach the moving parts of Mechanism ASSY.
• Absurb the looseness of the wire on the Tuner side.
Bend the wire by the root.
2D DIGITAL
CN7103
WR5
from Front S Jack board ASSY
Hang the hook of Bottom chassis on the Main board ASSY.
WR4
from ADV. JOG/SW BOARD ASSY

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

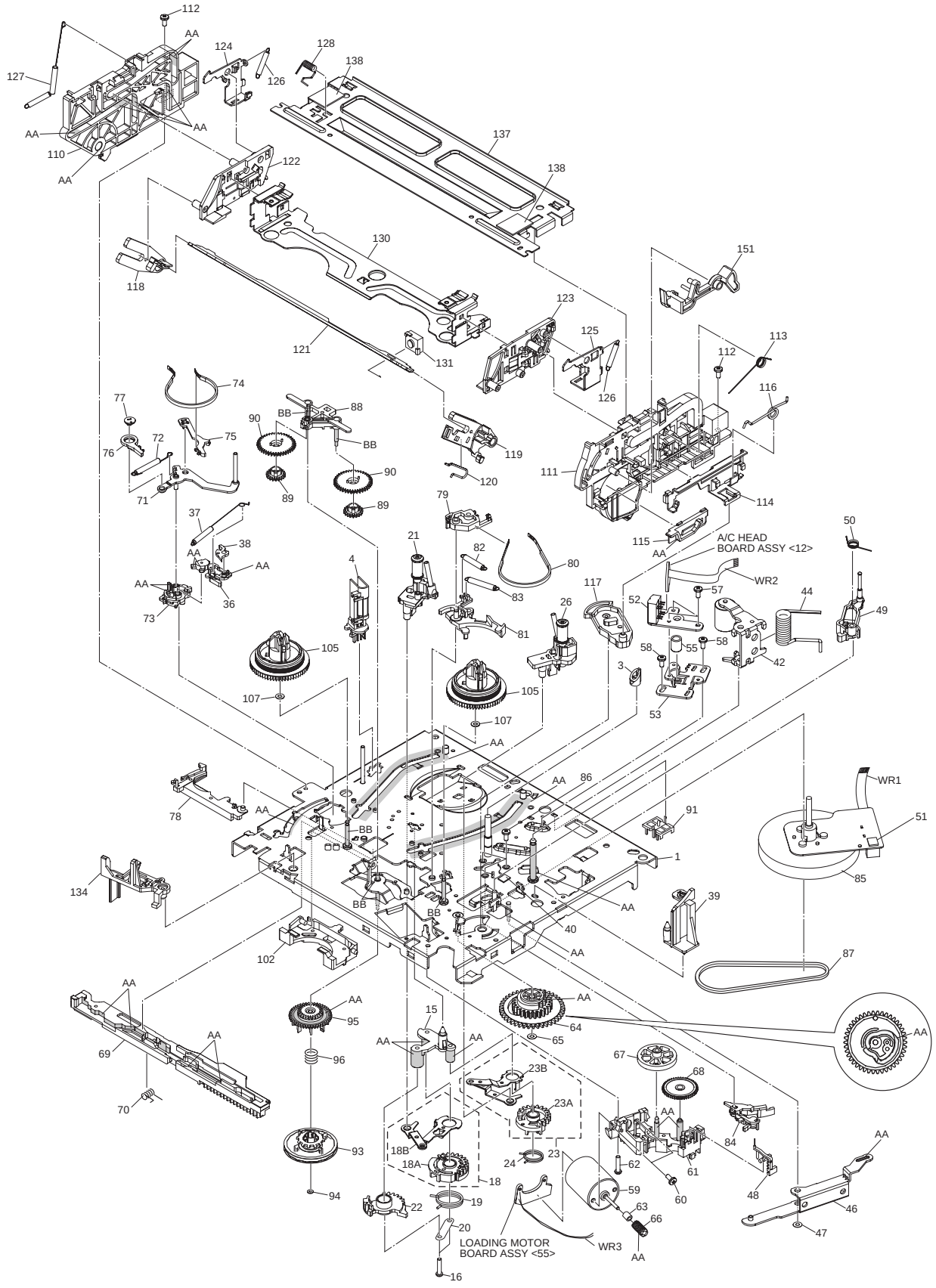
****

FINAL ASSEMBLY <M2>

	⚠	501	LP10415-007B	FRONT PANEL ASSY,S5901U
	⚠		LP10415-008B	FRONT PANEL ASSY,S5911U/S5911U(C)
		501A	LP21080-003A	CASSETTE DOOR,S5911U/S5911U(C)
			LP21080-004A	CASSETTE DOOR,S5901U
		501B	PQ46448	TORSION SPRING
		501C	LP21081-003A	DISPLAY WINDOW
		501D	LP31056-005A	COVER(R),S5911U/S5911U(C)
			LP31056-006A	COVER(R),S5901U
		501E	LP31057-007A	COVER(L),S5901U
			LP31057-008A	COVER(L),S5911U/S5911U(C)
	⚠	502	LP10418-001C	TOP COVER,S5901U
	⚠		LP10418-002C	TOP COVER,S5911U/S5911U(C)
		503	QYTDSF3010M	SCREW,X3,TOP COVER,S5901U
			QYTDSF3010R	SCREW,X3,TOP COVER,S5911U/S5911U(C)
		505	PDV2545A	DRUM ASSY
		510	QYSPSPD3008Z	SCREW,X3,DRUM
	⚠	511	LP10417-002B	BOTTOM CHASSIS,S5901U
	⚠		LP10417-003B	BOTTOM CHASSIS,S5911U/S5911U(C)
		513	LP40960-001A	SHEET(SHIELD)
		515	QYTDSF4012Z	SCREW,X2,MECHA
		516	QYSPSF3010Z	SCREW,X2,MECHA
		527	LP21101-001A	DRUM SHIELD
		528	QYSPST2606Z	SCREW,DRUM SHIELD
		529	LP31095-003A	KNOB ASSY,S5901U
			LP31095-001A	KNOB ASSY,S5911U/S5911U(C)
		530	QYTDSF2608Z	SCREW,X3,ADV.JOG/SW
		531	QYTDSF2608Z	SCREW,X2,S JACK
		WR4	QUQ212-0414CG	FFC WIRE,ADV.JOG CN7001
		WR5	QUQ212-0414CG	FFC WIRE,S JACK CN7103

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

5.3 MECHANISM ASSEMBLY <M4>



Classification	Part No.	Symbol in drawing
Grease	KYODO-SH-JB	AA
Oil	COSMO-HV56	BB

NOTE: The section marked in **AA** and **BB** indicate lubrication and greasing areas.

MECHANISM ASSEMBLY <M4>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		1	LP21039-001N	MAIN DECK ASSY
		3	LP40097-002D	GUIDE POLE CAP
		4	QAH0082-001	FULL ERASE HEAD
		15	LP30958-001B	LOAD.GEAR BASE
		16	QYTPST2620Z	SCREW,X2
		18	LP40798-001A	LOAD.GEAR(SUPPLY)ASSY
		18A	LP21040-001A	LOAD.GEAR(SUPPLY)
		18B	LP40799-001A	LOAD.ARM(SUPPLY)ASSY
		19	LP40837-001A	TORSION SPRING(SUPPLY)
		20	LP40903-001A	FIXING PLATE
		21	LP40806-001D	POLE BASE ASSY(SUPPLY)
		22	LP30959-002A	LOAD GEAR
		23	LP40802-001B	LOAD.GEAR(TAKE UP)ASSY
		23A	LP21041-001B	LOAD.GEAR(TAKE UP)
		23B	LP40803-001A	LOAD.ARM(TAKE UP)ASSY
		24	LP40838-001A	TORSION SPRING(TAKE UP)
		26	LP40808-001E	POLE BASE ASSY(TAKE UP)
		36	LP21055-001E	TU LEVER
		37	LP40943-001A	TENSION SPRING
		38	LP40859-001D	T-UP HEAD
		39	LP30961-001C	LID GUIDE
		40	LP30002-0B7A	SPACER
		42	LP40810-001A	PINCH ROLLER ARM ASSY
		44	LP40840-001C	TORSION SPRING
		46	LP30963-001B	PRESS LEVER
		47	PQM30017-24	SLIT WASHER
		48	LP40930-001B	S-SWITCH
		49	LP40813-001D	GUIDE ARM ASSY
		50	LP40841-001A	TORSION SPRING
		51	LP30002-090A	SPACER
		52	QAH0081-001	AC HEAD
		53	LP30965-001A	HEAD BASE
		55	LP40842-001A	COMPRESSION SPRING
		57	QYTSST2010Z	SCREW,X3
		58	QYTDST2606Z	SCREW,X2
		59	QAR0023-001	LOADING MOTOR
		60	QYTPSP3003Z	SCREW,X2
		61	LP21056-002E	MOTOR BRACKET
		62	QYTPST2620Z	SCREW
		63	LP40814-001B	WORM BEARING
		64	LP21044-001D	CONTROL CAM
		65	PQM30017-24	SLIT WASHER
		66	LP40815-001A	WORM GEAR
		67	LP40816-001B	HELICAL GEAR
		68	LP40817-001A	CONNECT GEAR
		69	LP10400-001H	CONTROL PLATE
		70	LP40843-001A	TORSION SPRING
		71	LP40818-001B	TENSION ARM ASSY
		72	LP40844-001C	TENSION SPRING
		73	LP21045-001C	TENSION ARM BASE
		74	LP40821-001A	TENSION BAND ASSY
		75	LP30967-001B	BAND HOLDER-1
		76	LP30968-001C	BAND HOLDER-2
		77	LP40822-002B	ADJUST PIN
		78	LP31000-005E	TENSION ARM LEVER
		79	LP21046-001C	MAIN BRAKE(TAKE UP)
		80	LP40824-001A	BAND BRAKE ASSY
		81	LP30969-002A	BRAKE LEVER
		82	LP30003-033B	TENSION SPRING
		83	LP30003-035B	TENSION SPRING
		84	LP40825-001B	CAPSTAN BRAKE ASSY
	⚠	85	QAR0204-002	CAPSTAN MOTOR
		86	QYTDSF2606M	SCREW,X3
		87	LP30005-010A	BELT,CAPSTAN MOTOR
		88	LP30970-001A	IDLER ARM
		89	LP40828-004A	IDLER GEAR 1,X2
		90	LP40829-001B	IDLER GEAR 2,X2
		91	LP31014-001A	WIRE HOLDER
		93	LP40934-001B	CLUTCH UNIT
		94	PQM30017-47	SLIT WASHER
		95	LP30973-001A	DIRECT GEAR
		96	LP40939-001A	COMPRESS.SPRING
		102	LP30974-001B	CHANGE LEVER
		105	LP21049-001A	REEL DISK,X2
		107	LP30017-004A	SPACER,X2
		110	LP10401-001F	SIDE FRAME(L)
		111	LP10402-001F	SIDE FRAME(R)
		112	QYTDST2606Z	SCREW,X2
		113	LP40917-001C	TORSION SPRING
		114	LP30976-001D	SIDE PLATE
		115	LP30977-002C	LIMIT PLATE
		116	LP40846-001C	LIMIT SPRING
		117	LP31100-001B	DRIVE LEVER
		118	LP30978-001B	DRIVE ARM(L)
		119	LP30979-001H	DRIVE ARM(R)
		120	LP40847-001B	TORSION SPRING
		121	LP30980-001A	CONNECT PLATE
		122	LP10403-001C	SIDE HOLDER(L)
		123	LP10404-001D	SIDE HOLDER(R)
		124	LP30983-001A	LOCK LEVER(L)
		125	LP30984-001A	LOCK LEVER(R)
		126	LP40924-001C	TENSION SPRING,X2
		127	LP40856-001B	EARTH SPRING(1)
		128	LP40857-001B	EARTH SPRING(2)
		130	LP30981-001E	CASETTE HOLDER ASSY
		131	LP31135-001A	C.H STOPPER
		134	LP21051-002C	REC SAFETY LEVER
		137	LP21052-001F	TOP FRAME
		138	LP30002-0A7A	SPACER,X2
		151	LP30985-001F	DOOR OPENER
		WR1	WJT0059-001C	E-CARD WIRE, DRUM
		WR2	WJT0067-001B	E-CARD WIRE, A/C HEAD CN2001
		WR3	WJS0022-001A	E-FL/RB WIRE, LOADING MOTOR

5.4 ELECTRICAL PARTS LIST

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
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MAIN BOARD ASSEMBLY <03>

PW1 MAIN BOARD ASS'Y<03> includes the parts shown in the following.

PW1 2D DIGITAL BOARD ASS'Y<05>

		REF No.	PART No.	PART NAME, DESCRIPTION
		PW1	LPA10155-02C1	MAIN BOARD ASSY
		IC1	JCP8051-NSA	IC
			or JCP8051-MSA	IC
		IC501	JCP8038	IC
		IC502	VC2076DP	IC
	⚠	IC2201	AN3663FBP	IC
		IC3001	MN101D06HJE	IC
			or MN101DF06KAFJE	IC
		IC3004	LPN0720-002A-02	IC(EEPROM)
		IC7002	GP1U291Q	IR DETECT UNIT
			or PIC-37143LJ	IR DETECT UNIT
			or PNA4652M00YC	IR DETECT UNIT
		Q7	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q8	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q9	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q12	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q17	DTC144WU	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR
		Q21	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q33	DTC144WU	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR
		Q38	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q401	2SA1576A/QR/-X	TRANSISTOR
		Q402	2SA1576A/QR/-X	TRANSISTOR
		Q403	DTC144WU	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR
		Q404	DTC144WU	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR
		Q405	2SA1576A/QR/-X	TRANSISTOR
		Q901	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q903	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q904	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q2001	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR
		Q2002	2SC4081/QRS/-X	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q2003	DTA144WU	DIGI TRANSISTOR
			or PDTA144WU	DIGI TRANSISTOR
			or RN2309	TRANSISTOR
			or UN511E	DIGI TRANSISTOR
		Q2051	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR
		Q2052	2SA1576A/QR/-X	TRANSISTOR
			or 2SB1218A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
		Q2053	DTC144WU	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR
		Q2054	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
			or 2SB1218A/QR/-X	TRANSISTOR
		Q2055	DTC144WU	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR
		Q2061	2SC4081/QRS/-X	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q2062	2SA1576A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
			or 2SB1218A/QR/-X	TRANSISTOR
		Q2063	DTC144WU	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR
		Q2201	DTA144WU	DIGI TRANSISTOR
			or PDTA144WU	DIGI TRANSISTOR
			or RN2309	TRANSISTOR
			or UN511E	DIGI TRANSISTOR
		Q2202	DTC144WU	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR
		Q2203	2SC4081/QRS/-X	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
		Q2204	2SC4081/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
			or 2SD1819A/QRS/-X	TRANSISTOR
		Q2251	DTC144WU	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR
		Q2252	DTC144WU	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR
		Q2253	DTC144WU	DIGI TRANSISTOR
			or PDTC144WU	DIGI TRANSISTOR
			or RN1309	DIGI TRANSISTOR
			or UN521E	DIGI TRANSISTOR
		Q2254	DTC114EU	DIGI TRANSISTOR
			or PDTC114EU	DIGI TRANSISTOR
			or RN1302	DIGI TRANSISTOR
			or UN5211	DIGI TRANSISTOR
		Q3002	PTZ-NV16A	PHOTO TRANSISTO

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		Q3005	UN521K	TRANSISTOR
			or DTC114WU	DIGI TRANSISTOR
		Q3006	2SC4081/QRS/-X	TRANSISTOR
		Q3007	2SC4081/QRS/-X	TRANSISTOR
		Q4001	UN5211	DIGI TRANSISTOR
			or RN1302	DIGI TRANSISTOR
			or DTC114EU	DIGI TRANSISTOR
			or PDTC114EU	DIGI TRANSISTOR
		Q4002	2SD1819A/QRS/-X	TRANSISTOR
			or 2PC4081/R/-X	TRANSISTOR
			or 2SC4081/QRS/-X	TRANSISTOR
		Q5101	2SK2043-CB14	FE TRANSISTOR
			or 2SK2043	FE TRANSISTOR
		Q5102	2SD2144S/UV/-T	TRANSISTOR
		Q5301	2SC1740S/RS/-T	TRANSISTOR
			or 2SC3199/YG/-T	TRANSISTOR
		Q5303	2SC5739/QP/	TRANSISTOR
		Q5304	2SD2144S/UV/-T	TRANSISTOR
		Q5305	DTA114EU	DIGI TRANSISTOR
			or PDTA114EU	DIGI TRANSISTOR
			or RN2302	TRANSISTOR
			or UN5111	DIGI TRANSISTOR
		Q5306	DTC114EU	DIGI TRANSISTOR
			or PDTC114EU	DIGI TRANSISTOR
			or UN5211	DIGI TRANSISTOR
			or RN1302	DIGI TRANSISTOR
		Q6030	2SB1218A/QR/-X	TRANSISTOR
			or 2PA1576/R/-X	TRANSISTOR
			or 2SA1576A/QR/-X	TRANSISTOR
		Q7001	DTA143TU	DIGI TRANSISTOR
		Q7002	DTA143TU	DIGI TRANSISTOR
		Q7003	DTA143TU	DIGI TRANSISTOR
		Q7004	DTA143TU	DIGI TRANSISTOR
		Q7005	DTA143TU	DIGI TRANSISTOR
		Q7008	DTC143TU	DIGI TRANSISTOR
		Q7009	DTC143TU	DIGI TRANSISTOR
		Q7010	DTC143TU	DIGI TRANSISTOR
		Q7011	DTC143TU	DIGI TRANSISTOR
		Q7012	DTC143TU	DIGI TRANSISTOR
		Q7013	DTC143TU	DIGI TRANSISTOR
		Q7014	DTC143TU	DIGI TRANSISTOR
		Q7201	2SA720/RS/-T	TRANSISTOR
		D1	QUY153-050Y	IM BUS WIRE
		D502	1SS133	DIODE
			or 1SS270A	DIODE
		D503	1SS133	DIODE
			or 1SS270A	DIODE
		D2251	1SS133	DIODE
			or 1SS270A	DIODE
		D3001	LNB2301L01VI	LE DIODE
		D3002	1SS133	DIODE
			or 1SS270A	DIODE
		D3005	11ES2	DIODE
			or 1A3G	DIODE
		D3007	1SS133	DIODE
			or 1SS270A	DIODE
		D3016	MTZJ3.9B	ZENER DIODE
			or RD3.9ES/B2/-T2	ZENER DIODE
		D5001	S1WB/A/60-4102	BRIDGE DIODE
			or S1WB/A/60-X	BRIDGE DIODE
			or S1WB(A)60F4072X	BRIDGE DIODE

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		D5101	AU01	DIODE	
			or 10ELS4	FR DIODE	
		D5102	AU01	DIODE	
			or 10ELS4	FR DIODE	
		D5103	1SS133	DIODE	
			or 1SS270A	DIODE	
		D5105	1SS133	DIODE	
			or 1SS270A	DIODE	
		D5203	AU01Z	FR DIODE	
			or 10ELS2	FR DIODE	
		D5204	AU01Z	FR DIODE	
			or 10ELS2	FR DIODE	
		D5206	AW04	SB DIODE	
			or SBO40	SB DIODE	
			or AK04	SB DIODE	
			or 1S4	SB DIODE	
			or 11EQS04	SB DIODE	
		D5207	AW04	SB DIODE	
			or AK04	SB DIODE	
			or 1S4	SB DIODE	
			or 11EQS04	SB DIODE	
			or SBO40	SB DIODE	
		D5210	AU01Z	FR DIODE	
			or ERA18-02-T2	FR DIODE	
			or PG104RS	FR DIODE	
			or 1SR153-400-T2	FR DIODE	
			or 10ELS2	FR DIODE	
		D5301	MTZJ15C	ZENER DIODE	
			or RD15ES/B3/-T2	ZENER DIODE	
		D5302	MTZJ12A	ZENER DIODE	
			or RD12ES/B1/-T2	ZENER DIODE	
		D5303	MTZJ5.6A	ZENER DIODE	
			or RD5.6ES/B1/-T2	ZENER DIODE	
		D5304	QUY153-050Y	IM BUS WIRE	
		D5305	MTZJ5.6C	ZENER DIODE	
			or RD5.6ES/B3/-T2	ZENER DIODE	
		D6002	HZ30-2L-T2	ZENER DIODE	
			or HZ30-2LTD	Z DIODE (M)	
		R1	NRSA02J-622X	MG RESISTOR	6.2kΩ,1/10W
		R2	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R3	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R6	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R7	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R8	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R9	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R12	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R21	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R22	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R25	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R26	NRSA02J-822X	MG RESISTOR	8.2kΩ,1/10W
		R27	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R28	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R29	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R31	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R32	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R34	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R36	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R42	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R44	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
		R45	NRSA02J-333X	MG RESISTOR	33kΩ,1/10W
		R46	NRSA02J-221X	MG RESISTOR	220Ω,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R48	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R68	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R77	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R90	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R93	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R104	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R118	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R120	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R201	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R202	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R401	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R402	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R403	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
		R404	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R405	NRSA02J-683X	MG RESISTOR	68kΩ,1/10W
		R407	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R408	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R503	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R504	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R505	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
		R506	NRSA02J-391X	MG RESISTOR	390Ω,1/10W
		R507	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R508	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
		R509	NRSA02J-162X	MG RESISTOR	1.6kΩ,1/10W
		R510	NRVA02D-102X	CMF RESISTOR	1kΩ,1/10W
		R511	NRVA02D-471X	CMF RESISTOR	470Ω,1/10W
		R512	NRVA02D-102X	CMF RESISTOR	1kΩ,1/10W
		R513	NRVA02D-152X	CMF RESISTOR	1.5kΩ,1/10W
		R514	NRVA02D-332X	CMF RESISTOR	3.3kΩ,1/10W
		R515	NRVA02D-332X	CMF RESISTOR	3.3kΩ,1/10W
		R901	NRSA02J-820X	MG RESISTOR	82Ω,1/10W
		R902	NRSA02J-152X	MG RESISTOR	1.5kΩ,1/10W
		R904	QRE123J-331X	RESISTOR	330Ω,1/2W
		R905	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R911	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R912	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R916	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R917	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R919	QRE123J-331X	RESISTOR	330Ω,1/2W
		R920	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R921	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R922	QRE123J-331X	RESISTOR	330Ω,1/2W
		R924	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R925	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R2003	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R2007	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2010	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R2013	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2014	NRSA02J-224X	MG RESISTOR	220kΩ,1/10W
		R2015	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R2016	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2017	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R2018	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2019	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2053	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2054	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R2055	NRSA02J-3R3X	MG RESISTOR	3.3Ω,1/10W
		R2056	QRE141J-101Y	RESISTOR	100Ω,1/4W
		R2057	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2058	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2059	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2060	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2061	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R2062	NRSA02J-3R3X	MG RESISTOR	3.3Ω,1/10W
		R2063	QRE141J-151Y	RESISTOR	150Ω,1/4W
		R2064	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2065	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R2201	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2202	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2203	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2204	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2205	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2206	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2207	NRSA02J-473X	MG RESISTOR	47kΩ,1/10W
		R2208	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R2209	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R2210	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2211	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R2212	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R2213	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2214	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R2215	QRE141J-221Y	RESISTOR	220Ω,1/4W
		R2216	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2217	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2218	NRSA02J-392X	MG RESISTOR	3.9kΩ,1/10W
		R2219	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2220	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R2230	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R2231	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R2251	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R2252	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R2253	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R2254	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R2255	NRSA02J-273X	MG RESISTOR	27kΩ,1/10W
		R2256	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R2257	NRSA02J-684X	MG RESISTOR	680kΩ,1/10W
		R2258	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R3003	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3004	QUY160-100Y	IM BUS WIRE	
		R3005	QRE141J-102Y	RESISTOR	1kΩ,1/4W
		R3006	QUY160-100Y	IM BUS WIRE	
		R3007	QUY160-100Y	IM BUS WIRE	
		R3008	QUY160-100Y	IM BUS WIRE	
		R3009	QUY160-100Y	IM BUS WIRE	
		R3010	QUY160-100Y	IM BUS WIRE	
		R3011	QUY160-100Y	IM BUS WIRE	
		R3012	QUY160-100Y	IM BUS WIRE	
		R3014	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3016	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3017	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3018	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3021	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3022	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3031	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3032	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3035	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3055	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3058	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3060	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3064	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3066	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3084	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R3086	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3087	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3090	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R3091	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3092	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3093	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3094	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3095	QUY160-100Y	IM BUS WIRE	
		R3096	QUY160-100Y	IM BUS WIRE	
		R3097	QUY160-100Y	IM BUS WIRE	
		R3098	QUY160-100Y	IM BUS WIRE	
		R3099	QUY160-100Y	IM BUS WIRE	
		R3100	QUY160-100Y	IM BUS WIRE	
		R3205	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3206	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3207	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3208	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3209	QRE141J-181Y	RESISTOR	180Ω,1/4W
		R3211	QRE141J-183Y	RESISTOR	18kΩ,1/4W
		R3212	NRSA02J-121X	MG RESISTOR	120Ω,1/10W
		R3213	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R3214	NRSA02J-121X	MG RESISTOR	120Ω,1/10W
		R3215	NRSA02J-183X	MG RESISTOR	18kΩ,1/10W
		R3216	NRSA02J-474X	MG RESISTOR	470kΩ,1/10W
		R3217	NRSA02J-334X	MG RESISTOR	330kΩ,1/10W
		R3218	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3219	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3220	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R3222	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R3223	NRSA02J-105X	MG RESISTOR	1MΩ,1/10W
		R3224	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R3226	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3227	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R3236	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3237	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3238	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3240	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3241	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3242	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R3243	NRSA02J-681X	MG RESISTOR	680Ω,1/10W
		R3244	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R3245	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
		R3252	QRE141J-153Y	RESISTOR	15kΩ,1/4W
		R3253	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R4001	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R4002	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R4003	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R4006	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
		R4010	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R4011	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R4012	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R4018	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R4019	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	⚠	R5001	QRZ9046-475Z	RESISTOR	4.7MΩ,1/2W
		R5101	QRE141J-334Y	RESISTOR	330kΩ,1/4W
		R5102	QRE141J-334Y	RESISTOR	330kΩ,1/4W
		R5103	QRE141J-683Y	RESISTOR	68kΩ,1/4W
		R5104	QRG029J-154G	OMF RESISTOR	150kΩ,2W
		R5106	QRT01DJ-R39X	MF RESISTOR	0.39Ω,1W
		R5107	QRE121J-331Y	RESISTOR	330Ω,1/2W
		R5108	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R5109	QRE141J-681Y	RESISTOR	680Ω,1/4W
		R5110	NRSA02J-224X	MG RESISTOR	220kΩ,1/10W
		R5112	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
		R5302	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5303	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R5304	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R5306	QRE141J-181Y	RESISTOR	180Ω,1/4W
		R5310	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R5312	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R5313	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6020	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6021	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6030	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R6031	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
		R6050	QRE141J-330Y	RESISTOR	33Ω,1/4W
		R6051	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R6502	NRSA02J-332X	MG RESISTOR	3.3kΩ,1/10W
		R6503	NRSA02J-153X	MG RESISTOR	15kΩ,1/10W
		R6504	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R7002	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7003	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7004	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7005	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7006	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7007	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7008	NRSA02J-331X	MG RESISTOR	330Ω,1/10W
		R7015	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		R7020	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R7021	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R7022	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R7023	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R7024	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R7030	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
		R7031	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
		R7032	NRSA02J-182X	MG RESISTOR	1.8kΩ,1/10W
		R7033	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R7034	NRSA02J-272X	MG RESISTOR	2.7kΩ,1/10W
		R7202	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R7203	NRSA02J-222X	MG RESISTOR	2.2kΩ,1/10W
		R7204	QRE123J-100X	RESISTOR	10Ω,1/2W
		VR2251	QVP0039-103Z	TRIM RESISTOR, REC FM ADJ	
		B11	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B502	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B3001	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B5301	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B5302	QUY153-050Y	IM BUS WIRE	
		B6020	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		B7001	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		C1	NCF21CZ-105X	CAPACITOR	1μF,16V
		C2	NCF21CZ-105X	CAPACITOR	1μF,16V
		C3	NCF21CZ-105X	CAPACITOR	1μF,16V
		C4	NCF21CZ-105X	CAPACITOR	1μF,16V
		C5	QEKC0JM-476	E CAPACITOR	47μF,6.3V
		C6	QCBB1HK-103	CAPACITOR	0.01μF,50V
		C7	NDC21HJ-151X	CAPACITOR	150pF,50V
		C8	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C9	NCB21HK-103X	CAPACITOR	0.01μF,50V
		C10	NDC21HJ-151X	CAPACITOR	150pF,50V
		C11	NCB21EK-104X	CAPACITOR	0.1μF,25V
		C12	NDC21HJ-7R0X	CAPACITOR	7pF,50V
		C14	NCB21EK-104X	CAPACITOR	0.1μF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C15	NCB21HK-103X	CAPACITOR	0.01µF,50V
C16	NCB21EK-104X	CAPACITOR	0.1µF,25V
C17	QEKJ1HM-335	E CAPACITOR	3.3µF,50V
C19	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C20	QEKJ1HM-105	E CAPACITOR	1µF,50V
C21	NCB21EK-104X	CAPACITOR	0.1µF,25V
C22	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C23	NCB21HK-103X	CAPACITOR	0.01µF,50V
C24	QCBB1HK-104	CAPACITOR	0.1µF,50V
C25	NDC21HJ-4R0X	CAPACITOR	4pF,50V
C26	NCB21HK-103X	CAPACITOR	0.01µF,50V
C27	NCB21EK-223X	CAPACITOR	0.022µF,25V
C28	QEKJ1HM-335	E CAPACITOR	3.3µF,50V
C29	NCB21HK-472X	CAPACITOR	0.0047µF,50V
C30	QEKJ1HM-474	E CAPACITOR	0.47µF,50V
C31	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C32	QCBB1HK-103	CAPACITOR	0.01µF,50V
C33	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C34	NCB21EK-104X	CAPACITOR	0.1µF,25V
C35	NCB21EK-104X	CAPACITOR	0.1µF,25V
C36	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C37	QEKJ1HM-105	E CAPACITOR	1µF,50V
C38	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C39	NCB21HK-103X	CAPACITOR	0.01µF,50V
C40	QEKJ1EM-106	E CAPACITOR	10µF,25V
C54	NCB21HK-103X	CAPACITOR	0.01µF,50V
C59	NCB21HK-103X	CAPACITOR	0.01µF,50V
C60	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C61	NCB21HK-103X	CAPACITOR	0.01µF,50V
C63	NCB21EK-104X	CAPACITOR	0.1µF,25V
C64	NDC21HJ-220X	CAPACITOR	22pF,50V
C69	NCB21HK-103X	CAPACITOR	0.01µF,50V
C70	NCB21HK-103X	CAPACITOR	0.01µF,50V
C71	NCB21HK-103X	CAPACITOR	0.01µF,50V
C72	NDC21HJ-470X	CAPACITOR	47pF,50V
C73	NDC21HJ-120X	CAPACITOR	12pF,50V
C74	NDC21HJ-120X	CAPACITOR	12pF,50V
C80	NCB21HK-103X	CAPACITOR	0.01µF,50V
C84	NDC21HJ-220X	CAPACITOR	22pF,50V
C110	NCB21HK-331X	CAPACITOR	330pF,50V
C201	QERF0JM-476	E CAPACITOR	47µF,6.3V
C202	NCB21EK-104X	CAPACITOR	0.1µF,25V
C203	NCF21CZ-105X	CAPACITOR	1µF,16V
C205	NDC21HJ-101X	CAPACITOR	100pF,50V
C207	NCF21CZ-105X	CAPACITOR	1µF,16V
C401	NCB21HK-103X	CAPACITOR	0.01µF,50V
C402	NCB21HK-223X	CAPACITOR	0.022µF,50V
C403	NDC21HJ-151X	CAPACITOR	150pF,50V
C404	NDC21HJ-470X	CAPACITOR	47pF,50V
C406	NCB21HK-681X	CAPACITOR	680pF,50V
C407	NDC21HJ-180X	CAPACITOR	18pF,50V
C501	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C502	QEKJ1HM-104	E CAPACITOR	0.1µF,50V
C503	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C504	NCB21EK-104X	CAPACITOR	0.1µF,25V
C505	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C506	NCB21HK-103X	CAPACITOR	0.01µF,50V
C507	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C508	QEKJ1HM-474	E CAPACITOR	0.47µF,50V
C509	QEKJ1EM-106	E CAPACITOR	10µF,25V
C510	QEKJ0JM-476	E CAPACITOR	47µF,6.3V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C511	NCB21HK-103X	CAPACITOR	0.01µF,50V
C512	NCB21HK-103X	CAPACITOR	0.01µF,50V
C513	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C514	NCB21HK-103X	CAPACITOR	0.01µF,50V
C515	NCB21HK-103X	CAPACITOR	0.01µF,50V
C518	NCB21EK-104X	CAPACITOR	0.1µF,25V
C519	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C520	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C521	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C522	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C523	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
C524	NDC21HG-301X	CAPACITOR	300pF,50V
C525	NDC21HG-301X	CAPACITOR	300pF,50V
C526	NDC21HJ-101X	CAPACITOR	100pF,50V
C527	NDC21HJ-181X	CAPACITOR	180pF,50V
C528	NDC21HG-271X	CAPACITOR	270pF,50V
C529	NDC21HG-820X	CAPACITOR	82pF,50V
C530	NDC21HG-221X	CAPACITOR	220pF,50V
C531	NDC21HG-301X	CAPACITOR	300pF,50V
C532	NDC21HG-301X	CAPACITOR	300pF,50V
C533	NCB21HK-103X	CAPACITOR	0.01µF,50V
C534	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C535	NCB21HK-103X	CAPACITOR	0.01µF,50V
C551	QEKJ1HM-105	E CAPACITOR	1µF,50V
C552	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
C553	NCB21HK-103X	CAPACITOR	0.01µF,50V
C557	QEKJ1HM-105	E CAPACITOR	1µF,50V
C558	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
C559	NCB21HK-103X	CAPACITOR	0.01µF,50V
C560	QEKJ1HM-105	E CAPACITOR	1µF,50V
C561	QEKJ1HM-105	E CAPACITOR	1µF,50V
C901	QETN0JM-477	E CAPACITOR	470µF,6.3V
C904	NCB21HK-103X	CAPACITOR	0.01µF,50V
C912	NCB21HK-103X	CAPACITOR	0.01µF,50V
C913	QETN0JM-477	E CAPACITOR	470µF,6.3V
C914	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
C915	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
C2001	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C2002	QEKJ1HM-105	E CAPACITOR	1µF,50V
C2003	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
C2005	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C2006	NCB21HK-123X	CAPACITOR	0.012µF,50V
C2007	QEKJ1CM-226	E CAPACITOR	22µF,16V
C2008	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C2009	NCB21HK-102X	CAPACITOR	0.001µF,50V
C2010	NCB21HK-152X	CAPACITOR	0.0015µF,50V
C2011	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C2012	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C2051	NCB21HK-331X	CAPACITOR	330pF,50V
C2052	QFN31HJ-333	F CAPACITOR	0.033µF,50V
C2053	NCB21HK-332X	CAPACITOR	0.0033µF,50V
C2054	NCB21HK-103X	CAPACITOR	0.01µF,50V
C2055	QEKJ1EM-106	E CAPACITOR	10µF,25V
C2061	QFN31HJ-333	F CAPACITOR	0.033µF,50V
C2062	NCB21HK-332X	CAPACITOR	0.0033µF,50V
C2063	NCB21HK-103X	CAPACITOR	0.01µF,50V
C2064	QEKJ1EM-106	E CAPACITOR	10µF,25V
C2201	QEKJ1EM-106	E CAPACITOR	10µF,25V
C2202	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C2203	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
C2204	QEKJ0JM-336	E CAPACITOR	33µF,6.3V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C2205	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2206	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2207	NCB21HK-153X	CAPACITOR	0.015µF,50V
		C2208	NCB21HK-153X	CAPACITOR	0.015µF,50V
		C2209	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2210	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2211	QEKJ0JM-336	E CAPACITOR	33µF,6.3V
		C2212	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C2214	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2215	QEKC1EM-106	E CAPACITOR	10µF,25V
		C2216	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C2218	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2219	QEKC1CM-226	E CAPACITOR	22µF,16V
		C2220	QEKJ1EM-106	E CAPACITOR	10µF,25V
		C2221	NCB21EK-223X	CAPACITOR	0.022µF,25V
		C2222	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2230	NDC21HJ-101X	CAPACITOR	100pF,50V
		C2231	NDC21HJ-101X	CAPACITOR	100pF,50V
		C2251	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2252	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2253	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2254	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C2255	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2256	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2257	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C2259	QEKJ1HM-334	E CAPACITOR	0.33µF,50V
		C2261	NDC21HJ-101X	CAPACITOR	100pF,50V
		C2262	NDC21HJ-101X	CAPACITOR	100pF,50V
		C3008	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C3011	QEKJ1HM-475	E CAPACITOR	4.7µF,50V
		C3016	NDC21HJ-150X	CAPACITOR	15pF,50V
		C3017	NDC21HJ-270X	CAPACITOR	27pF,50V
		C3019	NDC21HJ-150X	CAPACITOR	15pF,50V
		C3020	NDC21HJ-180X	CAPACITOR	18pF,50V
		C3023	NCF21CZ-105X	CAPACITOR	1µF,16V
		C3027	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C3035	NCF21EZ-105X	CAPACITOR	1µF,25V
		C3036	QERF0JM-107	E CAPACITOR	100µF,6.3V
		C3051	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C3053	QETJ0JM-337	E CAPACITOR	330µF,6.3V
		C3071	QETJ1HM-336	E CAPACITOR	33µF,50V
		C4001	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C4002	QERF1HM-105	E CAPACITOR	1µF,50V
		C4004	QERF1AM-336	E CAPACITOR	33µF,10V
		C4006	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
		C4007	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C4009	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C4010	QERF0JM-476	E CAPACITOR	47µF,6.3V
		C4011	NCB21CK-224X	CAPACITOR	0.22µF,16V
		C4014	NDC21HJ-101X	CAPACITOR	100pF,50V
		C4019	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C4031	QEKJ1CM-336	E CAPACITOR	33µF,16V
	⚠	C5001	QFZ9072-473	F CAPACITOR	0.047µF,250V
	⚠	C5004	QCZ9094-472	CAPACITOR	0.0047µF,125V
		C5006	QETM2DM-826	E CAPACITOR	82µF,200V
		C5101	QCZ0212-472	CAPACITOR	0.0047µF,1kV
		C5102	QCZ0339-101Z	CAPACITOR	100pF,1kV
		C5104	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C5105	QFN31HJ-183	F CAPACITOR	0.018µF,50V
		C5107	QFVF1HJ-104Z	F CAPACITOR	0.1µF,50V
		C5202	QETN1CM-108	E CAPACITOR	1000µF,16V

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		C5203	QEMT1AM-128	E CAPACITOR	1200µF,10V
		C5204	QETJ2AM-475	E CAPACITOR	4.7µF,100V
		C5206	QEKJ1CM-476	E CAPACITOR	47µF,16V
		C5207	QEKJ1CM-107	E CAPACITOR	100µF,16V
		C5301	QEKJ1CM-107	E CAPACITOR	100µF,16V
		C5302	QETN1HM-225	E CAPACITOR	2.2µF,50V
		C5303	QEKJ1CM-107	E CAPACITOR	100µF,16V
		C5305	QFVF1HJ-104Z	F CAPACITOR	0.1µF,50V
		C6501	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C6502	QEKC1EM-106	E CAPACITOR	10µF,25V
		C6503	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C6504	QCFB1HZ-104	CAPACITOR	0.1µF,50V
		C6506	QEKJ1HM-105	E CAPACITOR	1µF,50V
		C6508	NCB21EK-223X	CAPACITOR	0.022µF,25V
		C6509	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C6512	NCB21EK-223X	CAPACITOR	0.022µF,25V
		C6513	QEKJ1HM-225	E CAPACITOR	2.2µF,50V
		C6514	NCB21EK-223X	CAPACITOR	0.022µF,25V
		C6515	QEKC1HM-335	E CAPACITOR	3.3µF,50V
		C6516	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C6517	NCB21CK-224X	CAPACITOR	0.22µF,16V
		C7011	QEKJ0JM-227	E CAPACITOR	220µF,6.3V
		C7206	QEKJ0JM-227	E CAPACITOR	220µF,6.3V
		L1	QQL29BJ-100Z	COIL	10µH
		L2	QQL29BJ-101Z	COIL	100µH
		L3	QQL29BJ-100Z	COIL	10µH
		L4	QQL29BJ-100Z	COIL	10µH
		L5	QQL29BJ-100Z	COIL	10µH
		L11	QQL01BJ-120Z	COIL	12µH
		L13	QQL231J-470Y	COIL	47µH
		L15	QQL29BJ-100Z	COIL	10µH
		L19	QQL29BJ-100Z	COIL	10µH
		L20	QUY153-050Y	IM BUS WIRE	
		L28	QQL231J-150Y	COIL	15µH
		L201	QUY153-050Y	IM BUS WIRE	
		L203	QQL231J-1R0Y	COIL	1.0µH
		L401	QQL231J-150Y	COIL	15µH
		L501	QQL29BJ-100Z	COIL	10µH
		L503	QQL29BJ-100Z	COIL	10µH
		L504	QQL29BJ-100Z	COIL	10µH
		L505	QUY153-050Y	IM BUS WIRE	
		L901	QQL29BJ-101Z	COIL	100µH
		L2001	QUY153-050Y	IM BUS WIRE	
		L2201	QUY153-050Y	IM BUS WIRE	
		L2251	QQL29BJ-100Z	COIL	10µH
		L4001	QUY153-050Y	IM BUS WIRE	
		L5201	PELN1184	COIL	33µH
		L5202	PELN1184	COIL	33µH
		L5301	QUY153-050Y	IM BUS WIRE	
		L6001	QUY153-050Y	IM BUS WIRE	
		L6003	QUY153-050Y	IM BUS WIRE	
		L6004	QUY153-050Y	IM BUS WIRE	
		L6032	QUY153-050Y	IM BUS WIRE	
		L6050	QUY153-050Y	IM BUS WIRE	
		L6501	QUY153-050Y	IM BUS WIRE	
		L7201	QQL29BJ-101Z	COIL	100µH
		X2	QAX0575-001	CRYSTAL RESONATOR	
		X3001	QAX0526-001	CRYSTAL RESONATOR	
		S3001	QSW0602-004	PUSH SWITCH,REC SAFETY	
		S3002	QSW0602-004	PUSH SWITCH,S CASS.	
		S7002	QSW0456-002Z	TACT SWITCH,POWER	

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		S7004	QSW0456-002Z	TACT SWITCH,INSERT	
		S7006	QSW0456-002Z	TACT SWITCH,A.DUB	
		S7008	QSW0456-002Z	TACT SWITCH,REC	
		S7010	QSW0456-002Z	TACT SWITCH,PAUSE	
		S7011	QSW0456-002Z	TACT SWITCH,PLAY	
		S7013	QSW0456-002Z	TACT SWITCH,STOP/EJECT	
		K5101	QQR0678-001Z	FERRATE BEADS	
		K5102	QUY153-050Y	IM BUS WIRE	
		PC3001	RPI-304J	IC(PHOTO SENSOR)	
		PC3002	RPI-304J	IC(PHOTO SENSOR)	
	⚠	PC5101	PS2501-1	PH COUPLER	
		T2051	PELN0860	OSC TRANSFORMER	
		T2052	PELN0861	OSC TRANSFORMER	
	⚠	T5001	QQS0083-001	SW TRANSF	
	⚠	TB1	LP20978-003E	TERMINAL BOARD	
		TB2	LP21083-002B	TERMINAL BOARD	
		TU6001	QAU0256-001	TUNER	
		SD1	LP21099-001B	SHIELD CASE(PRE)	
		DI7001	LTG-Y2K12M-01J	LE DIODE	
	⚠	CD1	QMPD340-165-K	POWER CORD	
		OT1	LP30002-0A7A	SPACER	
		J1	QNN0380-002	PIN JACK,REAR1 IN	
		J2	QNN0286-002	PIN JACK,REAR OUT	
		J7101	QNN0381-001	PIN JACK,FRONT IN	
		FC5001	QNG0006-001Z	FUSE CLIP,F5001	
		FC5002	QNG0006-001Z	FUSE CLIP,F5001	
		FW3001	QUM023-18A4A4	P.R.WIRE,(1-3)FW7104	
		FW7101	QUM025-26A4A4	P.R.WIRE,(1-5)FW7102	
		WR6	QUB220-17A4A4	SIN TWIST WIRE	
	⚠	LF5002	QQR0532-001	LINE FILTER	
	⚠	VA5001	QAF0023-431Z	VARISTOR	
		CN1	QGF1201C2-11	FPC CONNECTOR,(1-11)DRUM	
		CN2001	QGF1207C1-06	FPC CONNECTOR,(1-6)AC/HEAD	
		CN2002	QGB2532J1-02	CONNECTOR,(1-2)FE HEAD	
		CN3001	QGB2032M4-12	CONNECTOR,(1-12)CAPSTAN MOTOR	
		CN7001	QGF1207C1-04	FPC CONNECTOR,(1-4)ADV.JOG	
		CN7103	QGF1207C1-04	FPC CONNECTOR,(1-4)FRONT S JACK	
		JS3001	QSW0954-002	ROTARY ENCODER	
		CP3001	QUY153-050Y	IM BUS WIRE	
		CP4001	QUY153-050Y	IM BUS WIRE	
	⚠	F5001	QMF51N2-1R25J1	FUSE	T1.25A,AC250V

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2D DIGITAL BOARD ASSEMBLY <05>

PW1	LPA10162-01B	2D DIGITAL BOARD ASSY	
IC1201	JCP8036	IC	
Q1201	2SC1317/RS/-T	TRANSISTOR	
Q1202	2SA1576A/QR/-X	TRANSISTOR	
	or 2PA1576/R/-X	TRANSISTOR	
Q1203	2SA1576A/QR/-X	TRANSISTOR	
	or 2PA1576/R/-X	TRANSISTOR	
Q1204	2SC4081/QRS/-X	TRANSISTOR	
	or 2PC4081/R/-X	TRANSISTOR	
Q1205	2SC4081/S/-X	TRANSISTOR	
D1201	RD4.3ES/B3/-T2	ZENER DIODE	
R1201	NRSA02J-121X	MG RESISTOR	120Ω,1/10W
R1202	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R1203	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R1204	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R1205	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R1206	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R1207	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
		R1208	NRSA02J-123X	MG RESISTOR	12kΩ,1/10W
		R1209	NRSA02J-180X	MG RESISTOR	18Ω,1/10W
		R1210	NRVA02D-393X	CMF RESISTOR	39kΩ,1/10W
		R1211	NRVA02D-153X	CMF RESISTOR	15kΩ,1/10W
		R1212	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R1213	NRSA02J-181X	MG RESISTOR	180Ω,1/10W
		R1214	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
		R1215	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
		R1216	NRSA02J-151X	MG RESISTOR	150Ω,1/10W
		R1217	NRVA02D-151X	CMF RESISTOR	150Ω,1/10W
		R1218	NRVA02D-301X	CMF RESISTOR	300Ω,1/10W
		R1220	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		R1222	NRSA02J-471X	MG RESISTOR	470Ω,1/10W
		R1224	NRSA02J-561X	MG RESISTOR	560Ω,1/10W
		VR1201	QUY153-050Y	IM BUS WIRE	
		C1201	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C1204	NDC21HJ-101X	CAPACITOR	100pF,50V
		C1211	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C1212	NCB21HK-102X	CAPACITOR	0.001µF,50V
		C1213	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1214	NCF21CZ-105X	CAPACITOR	1µF,16V
		C1215	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C1216	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1217	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1218	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1219	NCF21CZ-105X	CAPACITOR	1µF,16V
		C1220	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C1222	NDC21HJ-151X	CAPACITOR	150pF,50V
		C1223	NDC21HJ-680X	CAPACITOR	68pF,50V
		C1225	NDC21HJ-151X	CAPACITOR	150pF,50V
		C1226	NDC21HJ-680X	CAPACITOR	68pF,50V
		C1227	NCB21EK-104X	CAPACITOR	0.1µF,25V
		C1228	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C1229	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C1230	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1231	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1232	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1233	QDYB1CM-103Y	CAPACITOR	0.01µF,16V
		C1234	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1235	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		C1236	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1237	NCF21EZ-104X	CAPACITOR	0.1µF,25V
		C1238	NDC21HJ-180X	CAPACITOR	18pF,50V
		C1239	NDC21HJ-560X	CAPACITOR	56pF,50V
		C1243	NCB21HK-103X	CAPACITOR	0.01µF,50V
		C1244	QEKJ1EM-475	E CAPACITOR	4.7µF,25V
		C1245	NDC21HJ-150X	CAPACITOR	15pF,50V
		C1246	QEKJ0JM-476	E CAPACITOR	47µF,6.3V
		L1202	QQL29BJ-101Z	COIL	100µH
		L1203	QQL29BJ-101Z	COIL	100µH
		L1204	QQL29BJ-101Z	COIL	100µH
		L1205	QQL071J-2R7Y	COIL	2.7µH
		L1206	QQL071J-2R7Y	COIL	2.7µH
		L1207	QQL29BJ-101Z	COIL	100µH
		L1208	QQL071J-150Y	COIL	15µH
		LC1201	QQL29BJ-101Z	COIL	100µH
		SD1	LP31098-001B	SHIELD CASE(DEG)	

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		BK1	LP40425-001A	BRACKET(BOARD)	
		CN1201	QGG2502K1-12	HEADER PIN,(1-12)MAIN	

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A/C HEAD BOARD ASSEMBLY <12>

PW1	LPA10158-01A1	A/C HEAD BOARD ASSY	

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REAR.S.JACK BOARD ASSEMBLY <29>

PW5	LPA10155-01A5	REAR S JACK BOARD ASSY	
R928	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
R929	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
C915	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
J4	QND0077-001	S JACK	

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FRONT.S.JACK BOARD ASSEMBLY <36>

PW4	LPA10155-01A4	FRONT S JACK BOARD ASSY	
J7102	QND0084-001	S JACK	
CN7108	QGF1209F1-04	FPC CONNECTOR,(1-4)MAIN	

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ADV.JOG / SW BOARD ASSEMBLY <38>

PW6	LPA10155-01A6	ADV.JOG/SW BOARD ASSY	
R7047	NRSA02J-682X	MG RESISTOR	6.8kΩ,1/10W
R7048	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
S7030	QSW0456-002Z	TACT SWITCH	
S7031	QSW0456-002Z	TACT SWITCH	
UN7001	QSW0905-001	ROTARY ENCODER	
CN7003	QGF1209F1-04	FPC CONNECTOR,(1-4)MAIN	

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LOADING MOTOR BOARD ASSEMBLY <55>

PW2	LPA10158-01A2	LOADING MOTOR BOARD ASSY	

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	

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R.PAUSE BOARD ASSEMBLY <99>

PW2	LPA10155-02A2	R.PAUSE BAORD ASSY	
R7155	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
R7156	NRSA02J-101X	MG RESISTOR	100Ω,1/10W
J7104	PU60612	MINI JACK	
J7105	PU60612	MINI JACK	